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AN EVALUATION OF VOCATIONAL EDUCATION FOR DISADVANTAGED YOUTH.

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OBJECTIVES OF THIS STUDY WERE TO ASSESS THE OVERALL EFFECT OF VOCATIONAL AND BASIC EDUCATION ON DISADVANTAGED YOUTH AND TO IDENTIFY THE PATTERNS OF CHANGE TAKING PLACE IN DIFFERENT CATEGORIES OF DISADVANTAGED TRAINEES. AN EXPERIMENTAL GROUP OF 189 TRAINEES IN THE MUSKEGON AREA SKILL TRAINING CENTER WAS COMPARED WITH A CONTROL GROUP OF 89 NONTRAINEES OR EARLY DROPOUTS. PRE- AND POST-TESTS WERE USED TO MEASURE CHANGES IN INTELLIGENCE AND APTITUDES, BASIC SKILL ACHIEVEMENT, AND PERSONALITY CHARACTERISTICS, AND OCCUPATIONAL STATUS WAS COMPARED. USING PRETRAINING SCORES AS A BASE, THE MEAN SCORES FOR TRAINEES WERE SIGNIFICANTLY HIGHER AFTER TRAINING WHEN ACHIEVEMENT, INTELLIGENCE, OCCUPATIONAL STATUS, PERSONALITY, INTERPERSONAL RELATIONS, AND APTITUDE WERE MEASURED. TRAINEES SHOWED A SIGNIFICANTLY HIGHER RATE OF IMPROVEMENT THAN NONTRAINEES IN ACHIEVEMENT, INTELLIGENCE, OCCUPATIONAL STATUS, AND PERSONALITY. GIRLS, OLDER TRAINEES, TRAINEES WITH HIGHER FORMAL EDUCATION, TRAINEES WITH A HIGH ORIGINAL I.Q., AND TRAINEES WITH DEPENDENTS DID NOT SHOW A GREATER IMPROVEMENT THAN THEIR OPPOSITES. THE APPENDIX INCLUDES (1) A DESCRIPTION OF MEASUREMENT PROCEDURES AND INSTRUMENTS, (2) COURSE OUTLINES FROM THE TRAINING CENTER, AND (3) TABLES OF RAW DATA. (EM)

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MEASUREMENT ~ EVALUATION ~ RESEARCH ~

The Public Schools of the City of Muskegon

MUSKEGON, MICHIGAN

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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This work was conceived and organized by John Austin. He wrote "Basic Findings", "Intelligence", "Personality", "Achievement", and "Conclusions". Donald Sommerfeld wrote most of the "Introduction", "Program Description", and "Occupational Status". He was responsible for a large portion of the operational phase of the project. We have worked together and shared ideas to present a model, research evidence, and a point of view as to the meaning of vocational education for disadvantaged youth.

Muskegon, Michigan
April 1967

J.J.A.
D.A.S.

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INTRODUCTION

The American public is more aware of the seriousness of its problems with jobless, disadvantaged youth. There is a growing feeling that a manpower revolution is underway, posing problems which are incapable of solution simply by accelerating economic growth and increasing aggregate demand. This revolution is in part the consequence of distortions caused by automation and rapid technical change which are altering the skill requirements of the labor force. It also stems from an unprecedented influx of youth into the labor market (Harbison, 1965).

These problems will multiply in the immediate future. Between 1964 and 1970, 17 million youth will reach labor market age. It is estimated that 7 million will have quit school before the twelfth grade. To make matters worse, the national trends are for an increasing loss of entry level jobs. (Gordon 1965).

Gordon believes, "the subculture of America in which unemployment has been most chronic has made its adaptations. Where work has traditionally not existed, there is little achievement motivation. Where opportunity does not exist, there is disbelief in the rewards for work". He goes on to state that, "we thus have a growing group of young people who do not value work, and who, therefore, have no skills appropriate to the labor market. Even if they would, they do not know how to apply for a job; they do not know how to behave in the social role of an employee; and thus they do not know how to keep a job". (Gordon 1965).

There is an amazing deficit of research studies on the outcome of vocational educational training programs for young high school "dropouts" * (ages 17-21). One reason for the current state of affairs is that society has neglected to provide systematic help to this segment of our population and, too often, has tended to view the "dropout" as a bad risk without much societal potential (Monroe 1950). Much of the early research describing the characteristics of the "dropout" is narrow and pessimistic in tone. One can not help but wonder how much "social scapegoating" is connected with the problem of the "dropout". Schrieber states that, "It is the problem, not the fact, of dropout which is new and contemporary". (Schrieber 1964).

The problem of youth unemployment has been related to educational and vocational deficiency (Watson 1963). However, the problem of "dropouts" being educationally disadvantaged and thus lacking marketable job skills is just one facet of a greater social issue. The question of ability as related to educational and/or vocational proficiency or deficiency is critical when coupled to employment or occupational entry standards. There is no doubt that the number of low level entry jobs is declining in the United States (Pell 1964). It would seem that three courses of action are indicated; (1) systematic education and training of youth to develop and actualize their abilities to the maximum and (2) the development by industry and business of realistic job entry standards, coupled with (3)

* Because most "Disadvantaged Youth" are "Dropouts" both terms are meant to convey the same meaning in this report.

an active attempt on the part of the government and industry to create new jobs. The multiplicity of factors regarding youth employment cannot be minimized.

There is evidence that it is possible through systematic training programs to substantially help persons to utilize their abilities to become more proficient and skilled. Such training allows persons to better meet job entry standards and/or upgrade their occupational status (Wirtz 1965). There is some question at this time how applicable these findings are to youthful "dropouts". Systematic training programs for youth have been sponsored on two levels; (1) one revision of existing school programs so as to prevent "dropouts" and (2) the establishment of training centers to upgrade "dropouts" (Wirtz 1965).

The Federal Government has now launched a major rehabilitative effort to train the disadvantaged (both adults and youth) under such laws as the Manpower Development and Training Act, The Economic Opportunity Act, and the Primary and Secondary Education Act. As stated in the Manpower Report of the President (1966) in fiscal year 1967 twenty-five percent of the trainees will be disadvantaged young people and forty percent will be disadvantaged adults. As already indicated by Yormark (1964) there has been a subtle change in seeking national understanding of the unemployment problem. Under the Kennedy administration the training of the unemployed was viewed in an economic context. Help was sought from business and labor leaders to solve the economic problems of skill obsolescence, slow economic growth and productivity loss. President Johnson's "war on poverty" theme takes on a social rather than an economic context.

This shift in context is illustrated in the current Report of the Secretary of Labor on Manpower Research and Training under the MDTA (1966): "The job-oriented approach to training which was the original hallmark of the standard MDTA training programs, was an unquestioned success -- but largely for the best qualified of the unemployed who were able to meet employer standards. The subsequent development of training patterns to include expanded and strengthened supportive services, including basic education training provided a new dimension that paved the way toward serving the needs of many disadvantaged persons". It is hoped that this new social context which starts with the workers who need jobs rather than the jobs which need workers will not lessen the impact of education as an economic device.

What is now needed is to assess the progress of each program, raise the level of quality of the services offered and fill in the major gaps in the total effort. Information is needed on how these new programs do work and how they should work (National Committee on Employment of Youth, 1965).

Research findings are very limited on the success of programs to upgrade "dropouts". The major reason for this deficit of knowledge is the newness of these programs. Also lacking are clear cut guidelines and evaluation models to follow in conducting research on these programs. It has been suggested in one study that control groups be utilized and that specific goals be evaluated (Peterson 1965). From other areas of research, mental retardation, the suggestion for globular concepts and analysis of personality function as measurements of social competency and effectiveness has been advocated (Jastak 1963), (Wechsler 1944), (Hunt 1961).

The change of abilities, attitudes and occupational levels as a result of training will also require classification procedures that are highly descriptive of personality variables and behaviors. Such a classification system ideally should be continuous i.e. clinical to non-clinical and globular. (Leary 1957).

This report, hopefully, will serve as both a model for measuring the effects of a program geared to train disadvantaged youth and will also provide meaningful information about the value of such training programs. The primary focus of this report is the evaluation of the effects of the basic and vocational education program that is provided by the Muskegon Area Skill Training Center for disadvantaged youth. The center is operated under the special youth program provisions of the Manpower Development and Training Act (MDTA).

The four major areas that are covered in this report are:

1. Evaluation of change in intelligence and aptitudes.
2. Evaluation of change in basic skill achievement.
3. Evaluation of change in personality characteristics.
4. Evaluation of change in occupational status, including cost-benefit analysis.

Evaluation of a training program requires reliable and verifiable evidence for an adequate basis to determine whether the program is worthwhile. To insure objectivity a measurement process is needed. It is also helpful to draw a clear distinction between measurement and evaluation. These two items may be closely related in purpose, but they are separate and distinct operations. Measurement of training effectiveness may be undertaken without any attempt at evaluation and vice versa. Measurement implies some standard or criterion for estimating the changes that training has induced. It does not necessarily prove that the changes are desireable. Evaluation involves a comparison between the objectives sought and the results of training to determine if the effort is justified by the results (Caldwell, 1964).

Another common error in measuring training results is to confuse the number of persons reached by training with the number of persons who have benefited from training. To isolate the effects of training this evaluation procedure uses:

1. Hard data -- most evaluations are based on objective measurements.
2. Baseline information -- most measurements were made once at the start of the training period and then repeated again after the training period.
3. Control group -- the before and after data gathered on trainees was also gathered on a comparable control group.

Comparison of the pre - and post - measurements of the trainees with the pre- and post - measurements of non-trainees provides evidence whether the training has or has not achieved its intended purpose. Even though it might be desireable, it is not necessary to explore in depth the more difficult question of how this training has in fact changed the performance of individuals (Caldwell, 1964). This study also examined the significant areas of change based on sub-groups i.e. males - females, low I.Q. - high I.Q.

A criticism of this research design is its lack of longitudinal follow up. Improvement by trainees was found in many areas measured. However, it is difficult on the basis of this evaluation to state with finality that the positive changes shown will increase, stay the same or decrease over a longer period of time. It would be very interesting to re-test and re-interview these same trainees and non-trainees two to five years after the training period.

Throughout this study two main groups of youth will be mentioned. The first group, called trainees, are the experimental group. There were 189 in the trainee group tested during the pre-training period. The average length of training for this group was about nine months (8.7 months). The minimum number of months of training experienced by anyone in this group was four months. The maximum amount of training (between pre and post measurements) was eleven and one half months. A few trainees stayed at the training center for thirteen and fourteen months but they were given their post-training tests before they left the training center to facilitate the group testing process. The experimental group of trainees made up of all those that stayed at the training center four months and longer. This group includes 60 trainees who dropped out of the program between the fourth month of training and final graduation. It was felt that for general evaluation purposes it would be advisable to retain the dropouts in this group, as they may have derived some benefits even from the incomplete training experience. In another part of this report the dropouts and graduates in the experimental group will be further broken down and compared. The second main group will be referred to as the control group (non-trainees). There were 89 in this group who took the pre-training tests. This control group is made up of 41 youth that never entered the training program and 48 youth that dropped out of the training program during the first three months. Comparisons between youth with no training and youth with less than 3 months of training showed no significant differences. This finding made it possible for research and statistical purposes to combine all youth into the one control (non-trainee) group.

This study has one advantage over most research done on other training programs, in that the accumulation of base line data began before the training program began. In April 1965 disadvantaged youth eligible for the forthcoming training program were tested before they had signed up for the training program. The majority of this pre-training testing took place from April through July of 1965. The actual training program started with about one hundred disadvantaged youth in June, 1965 and another one hundred disadvantaged youth in July, 1965. Replacements for dropouts in the program continued to be accepted until the end of October, 1965.

Post training testing using the same instruments began in April, 1966. Most of the post-training tests for trainees and controls were completed by the end of July, 1966. A high percentage of the total trainees 94% or 180 individuals, were retested after the training period. Among the non-trainees, 91% or 81 individuals were retested. Unavailability (chiefly military service) and refusal to cooperate were the main reasons for the absence of retest records for 9 cases in the trainee group and 8 cases in the control group. Also due to inability to group schedule non-trainees for post training testing it was necessary to omit the GATB, a group test, from the retesting program. The individual testing was done by the Muskegon area psychologists and others at Job Corps Camps and around the country who helped us find and re-examine many of our dropouts and non-trainees who had moved.

At the time of post-testing, all individuals were questioned about their employment during the month before training began. They were also questioned about their current employment, if they had left the training program more than 3 months before. Those trainees who had been out of the program less than three months were again contacted for employment information at a later date to complete the occupational status study.

The next part in this report describes the training program and the population served by the Muskegon Area Skill Training Center. It should provide the reader with the necessary background information for appreciating the specific changes in trainees and control groups to be discussed in later chapters.

PART ONE

PROGRAM DESCRIPTION

The Department of Labor has defined a disadvantaged youth as an individual between 16 and 20 years of age who is out of school, out of work, comes from a seriously impoverished environment and cannot be expected to benefit from regular occupational training (Kranz, 1965).

National statistics on such disadvantaged youth have not been accurately compiled. The descriptive statistics available usually mention school dropouts or unemployed youth as being comparable with disadvantaged youth.

The information in Table 1 compares the disadvantaged youth in this study with statistics provided by the U.S. Department of Labor (Special Labor Force Report #56, 1965). These profiles show the youth of the present study to be different from the national characteristics listed in the areas of sex, age, race and marital status. The Muskegon group tends to be older in age and made up more of non-white youth, but in overall features, the two groups appear to be somewhat alike in make up.

TABLE 1

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Combined Experimental And Control Group
Percentage Comparison with A National Sample *

	National	Muskegon
Total Population	n=1,219 = 100%	n=278 = 100%
Sex		
Males	57%	62%
Females	43%	38%
Age		
16-17 year olds	36%	20%
18-19 year olds	36%	45%
20-21 year olds	28%	35%
Marital Status		
Single	85%	77%
Married	12%	20%
Separated, Divorced, Widowed	3%	3%
Race		
White	80%	63%
Non-White	20%	37%

* National Sample, Out of Work Youth; Special Labor Force Report #56, August 1965, U.S. Department of Labor, Washington, D. C.

National figures on the intelligence of school dropouts usually place the average I.Q. in the middle or high 90's (Sofokidis & Sullivan, 1964). The Muskegon sample had an average intelligence quotient of 92 before the training period. This finding is close to but perhaps slighly lower than the intelligence level found in national dropout studies. The differences may depend on the type of tests used, the sex investigated and the age level involved. Studies of dropouts have also shown most of them to be under achievers or behind their grade and ability levels in reading and arithmetic attainment (Sofokidis & Sullivan, 1964). Other selective features such as source of referral, purpose of study, and the nature of training programs are critical in establishing functional levels of expected ability.

The Muskegon sample averaged about one grade below the I.Q. of 92 in the reading rating which gave a standard score of 85 on a comparable statistical value and two grades below in arithmetic achievement with an average standard score of 80.

The total Muskegon sample (n=278) was divided into an experimental group (n=189) and a control group (n=89) based on the length of time spent at the training center. As described in the Introduction, our experimental group had four months or more at the Skill Training Center while the control group either never reported for training or dropped out of the training center during the first three months. The combined control group was not significantly different than the experimental group in sex, age, marital status, or race (see Table 2), highest grade completed, number of dependents, intelligence, or academic achievement. Data for those of the control group who had some training (borderline control) and for those who had none (pure control) are also given in Appendix C, Table A. It can be seen in Table A by inspection that the two sub groups before being combined to serve as a control group were similar. In all areas measured, these two groups when combined turned out to be similar to the experimental group. Hereafter, throughout this study, only the experimental (trainee) group and the (combined) control (non-trainee) group will be cited.

TABLE 2

Austin and Sommerfeld: Vocational Education for Disadvantaged Youth Project

Experimental and Control Groups Comparison Before Training (Primary Variables)

	Experimental	Control	Difference	Significance
Total Population	n=189 (100%)	n=89 (100%)	—	—
Sex				
Males	112 (59%)	60 (67%)	8%	n.s.
Females	77 (41%)	29 (33%)	8%	n.s.
Age				
16-17 year olds	36 (19%)	20 (22%)	3%	n.s.
18-19 year olds	84 (44%)	42 (47%)	3%	n.s.
20-21 year olds	69 (37%)	27 (31%)	6%	n.s.
Marital Status and Dependents				
Single	148 (78%)	66 (74%)	4%	n.s.
Married	34 (18%)	22 (25%)	7%	n.s.
Separated, Divorced, Widowed	7 (4%)	1 (1%)	3%	n.s.
Dependents	.6	.7	.1%	n.s.
Race				
White	116 (61%)	60 (67%)	6%	n.s.
Non-White	73 (39%)	29 (33%)	6%	n.s.
Educational Status				
Highest Grade Attended	9.4	9.2	.2	n.s.
Full Scale I.Q. (WAIS)	92	92	—	—
Altitude I.Q. (WAIS)	100	100	—	—
Verbal I.Q. (WAIS)	93	92	1	n.s.
Performance I.Q. (WAIS)	92	93	1	n.s.
Reading S.S. (WRAT)	86	85	1	n.s.
*Spelling S.S. (WRAT)	79	78	1	n.s.
Arithmetic S.S. (WRAT)	81	80	1	n.s.

* Experimental n=181, Control n=82.

TRAINING PROGRAM

In this section the program carried out at the Muskegon Area Skill Training Center will be described.
The goals of the Skill Center program were:

1. To improve the overall potential for employment of the trainees.
2. To prepare the trainee for a specific job.

Both goals were given close attention throughout the training program.

However, the first six months of the program were mainly devoted to the improvement of over all employability, while the second six months were mainly focused on the preparation for specific employment.

Before going into specific details of the training program at the Skill Center it might be proper to describe the staff. Members of the staff, 6 women and 12 men, were aware of the need for the improvement of disadvantaged youth. They brought a wide variety of skills to their jobs and used them as fully as was possible with individual cases. The vocational instructors seemed to have an easy time establishing rapport with the students. Their ability to work with their hands brought them respect and admiration from the trainees. The academic instructors approached their subject matter by reference to the preferred experiences and abilities of the trainees. There was freedom (encouraged by the program directors) for the staff members to experiment and work out their own training procedures based on their understanding of individual trainee needs. The team work of the entire staff was impressive. A sincere desire to "help these kids out of their problems" was the dominant theme or feeling expressed by the staff.

The absence of racial prejudice on the part of the staff served as an example to the trainees. Every instructor in the occupational areas had been successfully employed in the skill he or she was to teach prior to being hired by the Skill Center.

The academic instructors (4) were all successful high school instructors before coming to the Skill Center. The (5) counselors (with the exception of one past employee of the state employment office) were high school counselors before coming to the Skill Center. The varied talents of the staff complemented each other well and produced a reasonable and successful training philosophy and program.

First Program Period

The program began with an orientation course of two weeks. This course consisted of having speakers come in from local agencies and discussing with trainees their opportunities and goals for the future. This period was later shortened, because the trainees were more interested in starting the practical work than in listening to speakers.

During the first six months the trainees attended classes for four hours a day to improve their academic standing and personal appearance. The other half day (also four hours) was spent in one of the specific vocational training shops.

The introductory vocational training consisted of four seven week sessions in different vocational areas. Males trained in the metal shop, woodworking shop, welding, and auto mechanics. Females trained in general office practice, food services, nurse aide, and typing. Most of the trainees rotated through each of the four occupational areas specified for their sex. A few trainees were allowed to skip one of these areas and to spend fourteen weeks in one of the other areas. No females took classes designed for males, but three males took office practices and two males took food services. In each of the four periods the instructor acquainted the trainees with the basic operations and the use of the machines and equipment involved. Then basic or beginning projects were assigned so that the trainees were given a "feel" of the particular occupation. These exploratory shop experiences also served as a practical interest test for the trainee and revealed if he liked or disliked the shop experience. They also provided the shop instructor with a work sample so that he could evaluate trainee potential as to successful mastery of the occupation.

The classroom instruction (see Appendix B) was somewhat different than in the traditional school setting. Since some of the youngsters had dropped out of school because of dislike for a particular subject or a particular teacher, the instruction was geared to occupational and practical problems.

For the most part classroom learning experiences were related to the daily needs of the students. Such experiences included planning a budget, placing mail orders, and managing personal affairs, which was given a great deal of attention. Teachers kept in mind that this group of students needed to change their basic attitudes toward learning, society and responsibility.

Teachers concentrated on ways of gaining the cooperation of the students, rather than directing students in the learning experience. Some trainees were not ready to cooperate in the learning situation. Others who were more willing simply did not know how to work with the instructors in improving their skills.

The basic education phase in as much as was possible, included instruction that was tailor-made to meet the needs of the individual trainee. It involved special training in the areas of reading, writing, speaking and computations. The personal health class covered good health habits and attempted to cultivate those personal qualities that are important for successful employment. The job orientation class covered the areas of looking for a job, the interview, getting along with the boss, and what employers expected of their workers in terms of persistence and productivity.

During the first six months of the program each trainee was assigned to one counselor for the entire period of time. Each counselor directed three or four group counseling sessions a day and also had a case load of forty to fifty assigned counselees. The group counseling program was not group therapy in the strict sense. These classes were too large (12-20 trainees) for actual therapeutic counseling. They were directed by counselors and covered a wide range of topics including: current events, family problems, citizenship, budgets, home management, relationships with the opposite sex, and field trips to local business establishments.

Much emphasis was placed on the trainee's regular attendance and punctuality while enrolled in the program. No training allowance was paid on days on which the trainee had an unexcused absence. Being tardy three to five times also "cost" the trainee one days pay allowance. This depriving action was not meant to be a punitive measure. It was rather a reminder to the trainee that in the future he would meet with similar action in his regular job assignment. Toward the end of the training period a time clock and time card system was installed at the training center to further convey the importance of developing consistent work habits.

Second Program Period

Between Christmas and New Years, 1965 - 1966 the trainees were transferred from the introductory phase of training into their specific occupational training phase. Over eighty percent of the trainees in this "experimental" group completed the first half of the program and moved into the second half of the training.

Male trainees were assigned to occupational areas of welding, auto mechanics, wood working machine operation, metal working machine operation, or auto body repair. The auto body repair class was added because a fine instructor from the adult MDTA auto body project was available and his shop was housed in the same building. Female trainees were assigned to the occupational areas of clerk-typist, nurses aide, or food services. The food service area included training and experience in both preparing and serving food.

The daily schedule during this phase of the program was six hours of shop training a day and one hour each of related math and related communications techniques. All trainees in one occupation took the same math class and the same communications class. This caused a few problems because not all trainees in the same occupational class were able to perform at the same level in math and communications. The range in some of the occupational classes was from second grade reading to twelfth grade reading. The exceptionally high or low students were given special work and special assistance. An interesting fact that will be further explained in the section on academic achievement concerns the occupational ability of some of the poor readers. Some of the second and third grade readers have made extremely good adjustments to the jobs for which they were trained.

During the latter half of the training period three of the vocational programs provided on-the-job-training. This on-the-job-training was part of the program for trainees in the clerk-typist, food services, and auto mechanics occupations. The trainees were rotated on an average of two weeks on-the-job and two weeks back in the training shops. Not all trainees in these three areas were placed in on-the-job training positions. Only those trainees deemed able to perform above minimum standards were sent out for this work experience.

Since there was a consistent dropping out and enrolling of students, many of the students did not go through all the phases of the training program. As mentioned in the description of the experimental (trainee) group, all trainees in this group spent a minimum of four months in the training program with the average number of months in training being about nine months.

Now that the nature of the population and training program have been represented, we will procede into the research aspects and its results. The next part will describe and report on the basic findings for both the experimental and control groups. The following sections will evaluate specific changes in intelligence, academic achievement, personality, and occupational status.

PART TWO

BASIC FINDINGS

The findings of the entire study are discussed in detail in following sections. This part of the report deals with selected results that are felt to be most important and which have particular reference to the hypotheses.

The primary objective of this research is the assessment of the overall effect of vocational and basic education on disadvantaged youth.

> First Hypothesis: Using pre-training scores as a base, mean scores for trainees will be significantly higher when measured after the training by achievement tests, intelligence tests, occupational status, personality analysis, interpersonal measurements, and aptitude tests.
>
> Second Hypothesis: The mean scores for the group in training will show a significantly higher rate of improvement when compared with non-trainees in the areas of achievement, intelligence, occupational status, and personality.

The secondary objective of this research is to identify the pattern of change taking place in the different categories of disadvantaged youth that enrolled for training.

> First Hypothesis: Girls will show greater improvement than boys in all areas of change measured, except performance I.Q.
>
> Second Hypothesis: Older trainees (19-21) will show greater improvement than younger trainees (17-18) in all areas measured.
>
> Third Hypothesis: Trainees with higher formal education (grades 10, 11, 12) will show greater improvement than those with lower formal education grades (1-9) in all areas measured, except basic achievement.
>
> Fourth Hypothesis: Trainees with high original I.Q. will show greater improvement than trainees with low original I.Q. in all areas measured.
>
> Fifth Hypothesis: Trainees with high original altitude or potential I.Q. will show greater improvement than trainees with low altitude, or potential I.Q. in all areas measured.
>
> Sixth Hypothesis: Trainees having dependents will show greater improvement than trainees without dependents in all areas measured.

This was basically a longitudinal study measuring change in achievement, ability, personality, and occupational levels before and after the training program. These differences in attained levels after training were analyzed by eleven population variables.

The independent variables in this study are: sex, age, ethnic group, formal education level, type of training received, original ability level, original altitude level, number of dependents, personality characteristics, original achievement level, and occupational status.

The dependent variables in this study are the various test scores after training and the occupational level after training.

The choice of the dependent and independent variables makes it possible in this study to evaluate improvement in disadvantaged youth through a vocational and basic education training program.

The instruments used in this study are briefly discussed by a listing of significant points and are as follows:

The Wide Range Achievement Test by Joseph Jastak and Sidney Bijou has been used extensively since 1946. The WRAT provides three scores; one each for the area of reading (recognition) arithmetic and spelling. The realiability coefficients are reading .95, arithmetic .90, and spelling .88. The validation coefficient of reading is .84 with the New Stanford Word Reading Test. The validation coefficient of spelling is .93 with the New Stanford Dictation Test. The validation coefficient of arithmetic is .91 with the New Stanford Arithmetic Computation Test. (also see WRAT Manual, 1965 edition)

The Wechsler Adult Intelligence Scale by David Wechsler is regarded by most psychologists as one of the best adult intelligence tests available today. The reliability coefficients are verbal I.Q. .96, performance I.Q. .93 and full scale I.Q..97. The validation coefficients of correlation betweem the WAIS and the Stanford-Binet Form L. are verbal I.Q. .86, performance I.Q. .69 and full scale I.Q. .85.

The Interpersonal Check List - Muskegon Form, was prepared by Normand Adair and John Austin with the approval of Timothy Leary, Ph.D. and Psychological Consultation Service. The Interpersonal Check List was developed by Rolfe LaForge, Ph.D. and Robert Suczek, Ph.D. and other staff members of the Kaiser Foundation Research in Psychology. The ICL provides for a global approach to personality study. The reliability co-efficients of the octants for this test are: managerial .76, competitive .76, aggressive .81, rebellious .73, self-effacing .78, docile .83, cooperative .75, responsible .80,for an average reliability coefficient of .78. Validation of this instrument was with the Minnesota Multiphasic Personality Inventory and by intervariable distance correlations.

The General Aptitude Test Battery by the Bureau of Employment Security of the U.S. Department of Labor has been used effectively since 1953 by State Employment Offices in the United States. The reliability coefficients of the aptitudes were found to vary for males between .80 and .93 with a median reliability of .88. The reliability coefficients for females varied between .78 and .90 with a median variability of .86. One set of validity coefficients has been arrived at by these correlations with the American Council on Education, Psychological Examination: general intelligence .79, verbal aptitude .76, numerical aptitude .57, spatial aptitude .47, form perception .37, and clerical perception .42. All of these correlations are significant at the .05 level of confidence.

The Clinical Factor Analysis of the WISC, WAIS, and WRAT Scales by Joseph Jastak is explained in an attachment (see Appendix A). This work is an extension of the Jastak Test of Potential Ability and Behavioral Stability which has been published by the Educational Test Bureau, Minneapolis, Minnesota.

When the pre-training testing was completed, 278 disadvantaged youth had been tested. Each youth was tested with the Wide Range Achievement Test and the Wechsler Adult Intelligence Scale while only those youth reading at the fifth grade level or above were given the Interpersonal Checklist or the General Aptitude Test Battery. The Wide Range Achievement Test was given to the trainees in the program in October 1965, and again in December 1965, in order to assist counselors and instructors with their remedial training efforts, and their occupational counseling.

Post training testing when completed provided scores from 261 disadvantaged youth for statistical comparisons. The results of these comparisons are shown in Tables 3 and 4. It should be noted that the very small loss in number of youth from one testing session to the next was due to the persistence and diligence of the examining psychologists in securing cooperation from the youngsters. In the case of the control group a flat remuneration of five dollars ($5.00) per person to cover time, approximately two hours, and travel expenses was paid for retesting participation.

Primary Findings

The results in Tables 3 and 4 provide evidence and support for major acceptance of the first and second hypothesis of this study. Of ten population variables measured that were common to both the experimental and control groups on a pre and post basis, eight were significant at the .05 level of confidence or better. The two variables that did not demonstrate significance were the average hourly rate for wages and the mean for the Jastak Analysis standard deviation score.

TABLE 3

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Experimental And Control Groups Comparison
Before And After Training (Primary Variables)
By Mean Scores

Test	Experimental		Difference	Control		Difference	Significance
	Pre n=189	Post n=180		Pre n=89	Post n=81		
WAIS Full I.Q.	92.38	97.52	5.13	91.53	94.83	3.30	.01
WAIS Altitude I.Q.	100.06	105.57	5.50	99.28	102.40	3.12	.01
WAIS Verbal I.Q.	93.25	96.40	3.15	91.30	92.62	1.32	.01
WAIS Performance I.Q.	92.34	99.57	7.23	93.16	98.75	5.59	.05
WRAT Reading S.S.	85.44	89.63	4.19	84.72	85.34	.61	.001
WRAT Spelling S.S.	78.56	82.34	3.77	77.48	77.81	.32	.001
WRAT Arithmetic S.S.	80.80	88.76	7.96	79.67	80.17	.49	.001
Jastak S.D.	18.44	18.96	.52	18.23	19.32	1.09	n.s.
Jastak Mean	87.80	95.29	7.48	86.88	91.81	4.92	.05
Hourly Rate	1.35	1.93	.58	1.40	1.85	.45	n.s.

TABLE 4

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Experimental Group (X) Versus Control Group (Y)
T (1) = X (Pre) vs X (Post) T (2) = Y (Pre) vs Y (Post)
T (3) = X (Pre) vs Y (Pre) T (4) = X (Post) vs Y (Post)
Experimental Group n=180 Control Group n=81

	T (1)	T (2)	T (3)	T (4)
WAIS Full I.Q.	-3.99**	-1.88	.56	1.73
WAIS Altitude I.Q.	-3.96**	-1.64	.48	1.83
WAIS Verbal I.Q.	-2.41*	- .74	1.26	2.41*
WAIS Performance I.Q.	-5.35**	-2.99**	- .50	.49
WRAT Reading S.S.	-2.64**	- .27	.36	2.20*
WRAT Spelling S.S.	-2.76**	- .16	.65	2.63**
WRAT Arithmetic S.S.	-6.72**	- .34	.90	6.28**
Jastak S.D.	- .94	-1.53	.32	- .57
Jastak Mean	-3.75**	-1.89	.40	1.47
Hourly Rate	-5.19**	-2.82*	- .40	.57

* Significant at .05 level of confidence (1.96 two tailed t).
** Significant at .01 level of confidence (2.58 two tailed t).
- Indicates direction of significance is towards the second factor or test result.

In Table 4 the different possible combinations and the resultant t's illustrate clearly that the hypotheses were in the right direction. The trainees show a significant pre-post testing difference on nine out of the ten variables measured whereas the controls showed a significant pre-post testing difference only two of the ten variables.

The findings in this table also show again that there were no significant differences between the two groups at the time of pre-testing. Post test comparisons between the two groups reveal significant differences in the areas where they would be most expected i.e. educational training. A detailed discussion of the interpretation and specific meaning of these findings will be given in following sections of this report.

Secondary Findings

These results in terms of significance apply only to the experimental group for whom the six secondary hypothesis were formulated. However, for comparative purposes when similar data is available for the control group it is also presented.

Table 5 and 6 provide partial support of the following hypothesis:

> First Hypothesis: Girls will show greater improvement than boys in all areas of change measured except performance I.Q.
>
> Conclusion: First Hypothesis is not comfirmed.

As shown in Table 5, girls improved significantly more than boys, by t test of average differences, on the measures of WAIS Full I.Q., WAIS Altitude I.Q. and WRAT Spelling S.S. However, in Table 6 significance is not demonstrated by test of obtained difference between two means in favor of the girls. Boys made significant pre-post gains on many of the major test variables, including performance I.Q., while girls gained significantly on all variables and performance I.Q. in addition to maintaining significance on WRAT Reading and Spelling S.S. differences over boys.

Statistics used throughout this report, unless other indicated, are based on the following formula:

$$(1) \quad M = \frac{\Sigma X}{N} \qquad\qquad (2) \quad Va = \frac{N\Sigma X^2 - (\Sigma X)^2}{(N)\ (n-1)}$$

$$(3) \quad t = \frac{\text{av. } D\ (X) - \text{av. } D\ (Y)}{\sqrt{\frac{VX}{NX} + \frac{VY}{NY}}} \qquad\qquad (4) \quad t = \frac{M_1 - M_2}{\sqrt{\frac{V(1)}{N(1)} + \frac{V(2)}{N(2)}}}$$

TABLE 5

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison - Boys vs Girls Before Training And After Training

	Pre Training Data			Post Training Data			Significance
Population Males	n=112	Mean	S.D.	n=107	Mean	S.D.	
Highest Grade Completed		9.11	1.58		9.55	1.83	---
WAIS Full I.Q.		93.47	11.82		97.85	11.64	n.s.
WAIS Altitude I.Q.		101.31	12.43		105.56	12.91	n.s.
WAIS Verbal I.Q.		93.70	12.49		96.11	12.20	n.s.
WAIS Performance I.Q.		94.11	12.12		100.66	12.74	n.s.
WRAT Reading S.S.		83.91	16.40		87.62	16.76	n.s.
WRAT Spelling S.S.		75.63	12.47		78.76	12.78	n.s.
WRAT Arithmetic S.S.		80.44	10.55		87.33	11.96	n.s.
GATB G (n=98)		87.17	17.22		+88.14	17.50	n.s.
Population Females	n=77	Mean	S.D.	n=73	Mean	S.D.	
Highest Grade Completed		9.79	1.61		10.52	1.95	---
WAIS Full I.Q.		90.67	12.93		97.04	12.90	.05
WAIS Altitude I.Q.		97.94	12.92		105.58	14.67	.05
WAIS Verbal I.Q.		92.25	12.99		96.83	12.51	n.s.
WAIS Performance I.Q.		89.89	12.71		97.98	13.22	n.s.
WRAT Reading S.S.		88.05	11.55		92.58	12.70	n.s.
WRAT Spelling S.S. (n=70)		83.60	10.07		88.45	11.45	.05
WRAT Arithmetic S.S.		81.54	9.66		90.86	12.99	n.s.
GATB G (n=74)		86.25	15.68		++88.51	14.53	n.s.

Control Group Illustration
Before And After Training Period Test Results - No Test Of Difference

Population Males	n=60	Mean	S.D.	n=54	Mean	S.D.
Highest Grade Completed		8.93	1.60		9.24	1.70
WAIS Full I.Q.		92.18	10.76		95.55	11.92
WAIS Altitude I.Q.		99.70	11.03		102.62	13.42
WAIS Verbal I.Q.		91.91	11.45		92.75	12.62
WAIS Performance I.Q.		93.70	10.84		100.12	10.86
WRAT Reading S.S.		82.48	14.45		83.25	14.17
WRAT Spelling S.S. (n=54)		74.37	10.91		75.37	11.54
WRAT Arithemetic S.S.		79.90	9.81		80.46	9.99
GATB G (n=17)		85.52	12.94		0.00	0.00
Population Females	n=29	Mean	S.D.	n=27	Mean	S.D.
Highest Grade Completed		9.89	1.23		9.92	1.32
WAIS Full I.Q.		90.79	11.31		93.11	10.15
WAIS Altitude I.Q.		99.10	12.23		101.92	10.74
WAIS Verbal I.Q.		91.13	10.05		92.51	8.59
WAIS Performance I.Q.		91.93	13.30		96.00	14.08
WRAT Reading S.S.		89.86	13.34		+++90.96	17.72
WRAT Spelling S.S.		85.03	11.28		+++85.00	10.99
WRAT Arithmetic S.S.		79.82	7.28		+++79.80	6.87
GATB G (n=17)		87.52	14.23		(nl)48.00	0.00

+ (n=67)　++ (n=43)　+++ (n=26)

TABLE 6

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison
Boys (X) vs Girls (Y)
T (1) = X (Pre) vs X (Post)
T (2) = Y (Pre) vs Y (Post)
T (3) = X (Pre) vs Y (Pre)
T (4) - X (Post) vs Y (Post)
n=112
n=77

	T (1)	T (2)	T (3)	T (4)
WAIS Full I.Q.	-2.82*	-2.82**	1.22	.43
WAIS Altitude I.Q.	-2.48*	-3.16**	1.50	- .01
WAIS Verbal I.Q.	-1.52	-1.92	.37	- .38
WAIS Performance I.Q.	-3.89**	-3.73**	2.13*	1.35
WRAT Reading S.S.	-1.84	-2.09*	-2.35*	-2.25*
WRAT Spelling S.S.	-1.92	-2 40*	-4.98**	-5.26**
WRAT Arithmetic S.S.	-4.83**	-4.73**	-1.16	-1.84
GATB G	- .79	- .20	- .26	.32
Jastak S.D.	.11	-1.81	3.47**	1.33
Jastak Mean	-2.92**	-2.37*	1.15	.71
Hourly Rate	-5.37**	-1.96*	3.55**	5.45**

* Significant at .05 level of confidence (1.96 two tailed t).
** Significant at .01 level of confidence (2.58 two tailed t).
- Indicates direction of significance is towards the second factor or test result.

Second Hypothesis: Older Trainees (19-21) will show greater improvement than younger trainees (17-18) in all areas measured.

Conclusion: Second Hypothesis is not confirmed.

Tables 7 and 8 show that both younger and older trainees made positive gains on the same variables during the course of training.

TABLE 7

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison
Age 16-17-18 (X) vs Age 19-20-21 (Y)
n=76 n=104
By Mean Scores

	Age 16-17-18		Difference	Age 19-20-21		Difference	Significance
	Pre	Post		Pre	Post		
WAIS Full I.Q.	94.14	98.64	4.50	91.10	96.71	5.60	n.s.
WAIS Altitude I.Q.	101.30	107.03	5.73	99.16	104.50	5.33	n.s.
WAIS Verbal I.Q.	94.65	97.48	2.82	92.22	95.61	3.39	n.s.
WAIS Performance I.Q.	94.26	100.67	6.40	90.94	98.77	7.83	n.s.
WRAT Reading S.S.	85.21	89.65	4.44	85.61	89.62	4.00	n.s.
WRAT Spelling S.S.	78.46	81.91	3.45	78.64	82.66	4.02	n.s.
WRAT Arithmetic S.S.	81.81	88.81	7.00	80.06	88.73	8.66	n.s.
GATB G	87.80	87.71	- .08	86.71	89.86	3.15	n.s.
Jastak S.D.	18.96	18.87	- .09	18.06	19.03	.97	n.s.
Jastak Mean	89.85	96.15	6.29	86.31	94.66	8.35	n.s.
Hourly Rate	1.21	1.83	.62	1.41	1.98	.56	n.s.

TABLE 8

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison

Age 16-17-18 (X) vs Age 19-20-21 (Y)
T (1) = X (Pre) vs X (Post) T (2) = Y (Pre) vs Y (Post)
T (3) = X (Pre) vs Y (Pre) T (4) = X (Post) vs Y (Post)
Age 16-17-18 (n=76) Age 19-20-21 (n=104)

	T (1)	T (2)	T (3)	T (4)
WAIS Full I.Q.	-2.50*	-3.12**	1.68	1.08
WAIS Altitude I.Q.	-2.85**	-2.81**	1.13	1.25
WAIS Verbal I.Q.	-1.57	-1.85	1.33	1.03
WAIS Performance I.Q.	-3.18**	4.33**	1.75	.97
WRAT Reading S.S.	-1.81	-1.91	- .18	.01
WRAT Spelling S.S.	-1.66	-2.20*	- .09	- .37
WRAT Arithmetic S.S.	-3.94**	-5.44**	1.18	.04
GATB G	.02	-1.11	.34	- .66
Jastak S.D.	.11	-1.32	1.17	- .20
Jastak Mean	-2.08*	-3.15**	1.29	.50
Hourly Rate	-2.90**	-4.32	-1.15	- .80

* Significant at .05 level of confidence (1.96 two tailed t).
** Significant at .01 level of confidence (2.58 two tailed t).
- Indicates direction of significance is towards the second factor or test result

Third Hypothesis: Trainees with higher formal education (grades 10, 11, 12) will show greater improvement than those with lower formal education (grades 1-9) in all areas measured except basic achievement.

Conclusion: Third Hypothesis is not confirmed.

Tables 9 and 10 show that meaningful gains occured for both groups but that extremely significant differences in favor of the higher formal education group held from the pre to the post testing comparison. School experience as indicated by attendance and/or advancement does make a difference. This finding is also dependent on the additional knowledge that the more educationally experienced trainee, even though disadvantaged may often have an ability edge over his fellow trainee with less educational experience. The next two hypotheses will have bearing on this problem.

TABLE 9

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison

Lower Formal Education 1-9 (X) vs Higher Formal Education 10-12 (Y)

n=109 n=80

By Mean Scores

	Lower Formal Education 1-9		Difference	Higher Formal Education 10-12		Difference	Sifnificance
	Pre	Post		Pre	Post		
WAIS Full I.Q.	90.20	95.13	4.93	95.45	100.88	5.42	n.s.
WAIS Altitude I.Q.	97.74	102.70	4.96	103.32	109.58	6.26	n.s.
WAIS Verbal I.Q.	90.29	93.60	3.30	97.38	100.33	2.94	n.s.
WAIS Performance I.Q.	91.36	98.01	6.65	93.72	101.76	8.04	n.s.
WRAT Reading S.S.	81.50	85.76	4.25	90.96	95.06	4.10	n.s.
WRAT Spelling S.S.	74.07	77.67	3.60	84.81	88.84	4.02	n.s.
WRAT Arithmetic S.S.	78.39	86.02	7.63	84.18	92.60	8.41	n.s.
GATB G	82.81	84.61	1.79	92.80	94.45	1.65	n.s.
Jastak S.D.	18.64	19.25	.06	18.16	18.57	.40	n.s.
Jastak Mean	84.20	91.16	6.95	92.85	101.07	8.21	n.s.
Hourly Rate	1.36	2.06	.69	1.32	1.72	.40	n.s.

TABLE 10

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison
Lower Formal Education 1-9 (X) vs Higher Formal Education 10-12 (Y)
T (1) = X (Pre) vs X (Post) T (2) = Y (Pre) vs Y (Post)
T (3) = X (Pre) vs Y (Pre) T (4) = X (Post) vs Y (Post)
n=109 n=80

	T (1)	T (2)	T (3)	T (4)
WAIS Full I.Q.	-3.06**	-2.70**	-2.86**	-3.18**
WAIS Altitude I.Q.	-2.81**	-2.97**	-2.97**	-3.43**
WAIS Verbal I.Q.	-2.05*	-1.46	-3.84**	-3.74**
WAIS Performance I.Q.	-3.70**	-3.98**	-1.25	-1.92
WRAT Reading S.S.	-2.18*	-1.70	-4.42**	-4.15**
WRAT Spelling S.S.	-2.30*	-1.99*	-6.26**	-5.93**
WRAT Arithmetic	-5.38**	-4.45**	-3.95**	-3.54**
GATB G	- .61	- .53	-3.37**	-3.24**
Jastak S.D.	- .82	- .49	.62	.85
Jastak Mean	-2.74**	2.74**	-3.16**	-3.51**
Hourly Rate	-4.84**	-2.28*	.22	2.13*

* Significant at .05 level of confidence (1.96 two tailed t)
** Significant at .01 level of confidence (2.58 two tailed t)
- Indicates direction of significance is towards the second factor or test result.

Fourth Hypothesis: Trainees with high original I.Q. will show greater improvement than trainees with low original I.Q. in all areas measured.

Conclusion: Fourth Hypothesis is not confirmed.

Tables 11 and 12 show that the training program was extremely beneficial for the lower third subgroup of the trainee population. As a group they made significant gains over the upper third subgroup as shown by the measurement of change statistic on the full scale I.Q., verbal I.Q., Jastak mean, and hourly rate of wages. The upper third subgroup demonstrated significant gains only in the area of reading and arithmetic. This finding also helps to answer the question that was raised in connection with the third hypothesis. The question being whether greater school experience as indicated by attendance and/or advancement may be due to an ability edge. Our findings briefly stated would seem to indicate that an academic ability edge, rather than general ability, does exist. The upper third subgroup's significant gains in the area of reading, arithmetic and also spelling (Table 12) on a pre vs post basis lends support to the idea of an academic ability difference that is critical. In addition the lower third subgroup's lack of significant pre vs post gains in reading and spelling which is countered by a significant arithmetic gain suggests that the academic ability difference that we are speaking of is in reality a language ability difference. More comment about this phenomenon will be made in Parts 3, 4, and 5 of this report.

TABLE 11

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison
Full Scale I.Q.-Lower Subgroup (X) vs Upper Subgroup (Y)*
n=60 n=66
By Mean Scores

	Lower Subgroup		Difference	Upper Subgroup		Difference	Significance
	Pre	Post		Pre	Post		
WAIS Full I.Q.	78.57	84.98	6.40	105.20	109.17	3.96	.01
WAIS Altitude I.Q.	87.08	92.00	4.91	112.69	117.67	4.98	n.s.
WAIS Verbal I.Q.	80.31	85.10	4.78	105.93	107.29	1.35	.01
WAIS Performance I.Q.	79.05	87.15	8.10	103.61	110.70	7.09	n.s.
WRAT Reading S.S.	74.98	77.68	2.70	93.88	99.45	5.56	.01
WRAT Spelling S.S.	71.75	75.36	3.61	84.45	88.84	4.38	n.s.
WRAT Arithmetic S.S.	74.50	79.56	5.05	87.38	98.04	10.66	.01
GATB G	73.92	72.81	-1.11	99.57	101.54	1.97	n.s.
Jastak S.D.	16.35	17.59	1.24	20.21	19.96	-.24	n.s.
Jastak Mean	67.08	76.79	9.70	107.05	111.91	4.86	.05
Hourly Rate	.95	2.04	1.08	1.40	1.78	.38	.01

* Subgroups are approximately the lower third and upper third of the total population. They were arrived at by adding and/or subtracting half S.D. to/from the mean.

TABLE 12

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison

Full Scale I.Q.-Lower Subgroup (X) vs Upper Subgroup (Y)*
T (1) = X (Pre) vs X (Post)   T (2) = Y (Pre) vs Y (Post)
T (3) = X (Pre) vs Y (Pre)   T (4) = X (Post) vs Y (Post)

n=60   n=66

	T (1)	T (2)	T (3)	T (4)
WAIS Full I.Q.	-4.58**	-3.05**	-21.67**	-16.56**
WAIS Altitude I.Q.	-3.01**	-3.25**	-16.85**	-15.63**
WAIS Verbal I.Q.	-3.37**	- .91	-19.02**	-14.29**
WAIS Performance I.Q.	-4.38**	-4.64**	-15.34**	-13.18**
WRAT Reading S.S.	-1.37	-2.39*	- 8.81**	-10.09**
WRAT Spelling S.S.	-1.76	-2.04*	- 6.29**	- 6.19**
WRAT Arithmetic S.S.	-3.11**	-5.82**	- 8.01**	-10.02**
GATB G	.35	- .63	- 7.77**	- 9.85**
Jastak S.D.	-1.34	.27	- 4.04	- 2.69**
Jastak Mean	-4.87**	-1.90	-21.88**	-13.16**
Hourly Rate	-5.38**	-1.77	- 2.28*	1.17

* Significant at .05 level of confidence (1.96 two tailed t).
** Significant at .01 level of confidence (2.58 two tailed t).
- Indicates direction of significance is towards the second factor or test result.

Fifth Hypothesis: Trainees with high original altitude I.Q. will show greater improvement than trainees with low altitude or potential I.Q. in all areas measured.

Conclusion: Fifth Hypothesis is not confirmed.

Table 13 shows that the training program was very beneficial for the lower subgroup (approximately 30%) of the total trainee population based on altitude I.Q. As a group they made significant gains, in comparison to the upper subgroup, on the full scale I.Q., verbal I.Q., Jastak S.D., Jastak mean and hourly rate of wages. The upper subgroup made significant gains on reading and arithmetic. These findings are practically identical to the results that were cited in connection with the fourth hypothesis.

TABLE 13

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison
Altitude IQ-Lower Subgroup (X) vs Upper Subgroup (Y)*
n=55 n=59

By Mean Scores

	Lower Subgroup		Differ ence	Upper Subgroup		Differ-ence	Signifi-ance
	Pre	Post		Pre	Post		
WAIS Full I.Q.	78.88	85.53	6.65	104.98	108.98	4.00	.01
WAIS Altitude I.Q.	85.50	91.96	6.46	114.15	117.66	3.50	n.s.
WAIS Verbal I.Q.	80.73	85.82	5.09	105.50	107.08	1.57	.01
WAIS Performance I.Q.	79.13	87.30	8.17	103.66	110.40	6.73	n.s.
WRAT Reading S.S.	74.32	77.44	3.11	93.73	98.91	5.17	.01
WRAT Spelling S.S.	71.82	75.05	3.23	84.83	88.72	3.89	n.s.
WRAT Arithmetic S.S.	74.32	80.05	5.73	87.14	96.91	9.77	.01
GATB G	73.33	72.07	-1.25	99.30	102.16	2.86	n.s.
Jastak S.D.	16.18	17.31	1.12	21.06	19.98	-1.08	.05
Jastak Mean	67.24	77.42	10.17	106.56	111.29	4.73	.01
Hourly Rate	.99	2.01	1.02	1.27	1.74	.47	.01

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* Subgroups are approximately the lower third and upper third of the total population. They were arrived at by adding and/or subtracting half S.D to/from the mean.

Sixth Hypothesis: Trainees having dependents will show greater improvement than trainees without dependents in all areas measured.

Conclusion: Sixth Hypothesis is not confirmed.

Tables 14 and 15 show that no significant differences, in terms of change, occured for one group (with dependents) over the other group (without dependents). Both groups benefited from the training program. Inspection of the data reveals that the two groups were different from the beginning at the time of pre testing. However, training did not change significantly the basic differences that existed. It is of interest that the group with dependents have achievement scores that are closer to their ability (full scale I.Q.) than the group without dependents. Less underachievement may be a sign of better integration and maturity.

TABLE 14

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Experimental Group Comparison
Trainees With No Dependents (X) vs Trainees With Dependents (Y)
n=129 n=50
By Mean Scores

	With No Dependents		Difference	With Dependents		Difference	Significance
	Pre	Post		Pre	Post		
WAIS Full I.Q.	90.68	96.00	5.32	96.48	100.96	4.48	n.s.
WAIS Altitude I.Q.	98.46	103.58	5.11	103.96	109.96	6.00	n.s.
WAIS Verbal I.Q.	91.53	95.03	3.50	97.32	99.50	2.18	n.s.
WAIS Performance I.Q.	90.88	98.04	7.16	95.96	102.98	7.02	n.s.
WRAT Reading S.S.	83.59	87.75	4.16	90.14	94.38	4.24	n.s.
WRAT Spelling S.S.	77.41	80.80	3.38	81.46	86.04	4.57	n.s.
WRAT Arithmetic S.S.	79.32	86.60	7.28	84.34	93.74	9.40	n.s.
GATB G	85.17	86.07	.89	92.80	96.60	3.80	n.s.
Jastak S.D.	18.44	18.94	.50	18.52	18.74	.21	n.s.
Jastak Mean	85.06	92.66	7.60	94.44	101.30	6.85	n.s.
Hourly Rate	1.18	1.82	.63	1.57	2.09	.51	n.s.

TABLE 15

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison
Trainees With No Dependents (X) vs Trainees With Dependents (Y)
T (1) = X (Pre) vs X (Post)   T (2) = Y (Pre) vs Y (Post)
T (3) = X (Pre) vs Y (Pre)   T (4) = X (Post) vs Y (Post)
n=129   n=50

	T (1)	T (2)	T (3)	T (4)
WAIS Full I.Q.	-3.64**	-1.83	-2.80**	-2.34*
WAIS Altitude I.Q.	-3.30**	-2.33*	-2.61**	-2.73**
WAIS Verbal I.Q.	-2.38*	- .84	-2.68**	-2.01*
WAIS Performance I.Q.	-4.64**	-2.79**	-2.43*	-2.21*
WRAT Reading S.S.	-2.33*	-1.34	-2.56*	-2.53*
WRAT Spelling S.S.	-2.21*	-1.71	-1.90	-2.30*
WRAT Arithmetic S.S.	-5.68**	-3.91**	-2.79**	-3.28**
GATB G	- .42	-1.00	-2.18*	-3.25**
Jastak S.D.	-1.00	- .19	- .12	.34
Jastak Mean	-3.35**	-1.85	-3.01**	-2.68**
Hourly Rate	-4.28**	-3.24**	-2.45*	-1.80

* Significant at .05 level of confidence (1.96 two tailed t).
** Significant at .01 level of confidence (2.58 two tailed t).
- Indicates direction of significance is towards the second factor or test result.

The basic findings which have just been presented generally indicate that disadvantaged youth are helped in a meaningful way by a vocational education program of the type offered by the Muskegon Area Skill Training Center.

Attention is called for in observing that the training program is not biased in that all categories of youth profited from the program. The fact that none of the secondary hypotheses were confirmed indicates that the instructional and training aspects of the program are valid. It is particularly heartening to note that vocational education and training is very meaningful for girls, young trainees, and trainees with low ability and basic achievement skills.

The following sections of this report will deal in depth with the details and implications which the basic findings have shown to be important issues.

PART THREE

INTELLIGENCE

The measurement of intelligence is characterized by three features. These features are, (1) time and place (2) interpersonal process and (3) scientific procedure. In this study we examined each trainee and non-trainee twice in a one year time period. These examinations took place during what is best described as the late adolescent-early adult stages of development (17-21 years of age) for the youth we studied. The interpersonal aspect (individual testing) of the examination process was as fair and objective as can be currently structured. All of the examiners were experienced psychologists and/or school psychological diagnosticians. Finally the instruments that were used are generally conceded to be the best that are available to measure in a scientific manner the behavior that expresses mental ability or intelligence.

The definition of intelligence is effected by the measurement process and vice versa. The authors of the measuring instruments and process, (Wechsler, 1958) (Jastak, 1959) that we have depended on obviously have a conceptual frame of reference as to what intelligence is. Their judgements and conclusions are reflected in the instruments and procedures that we have used. Because it is beyond the scope of this study we will not attempt to treat in depth all the theoretical positions regarding intelligence. Rather we will illustrate our position by citing the findings we have obtained and by relating them to key concepts.

> For example, Wechsler, has stated that, "intelligence", operationally defined, is the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment". (Wechsler, 1958). Our evidence tends to support this idea in that as our trainees gained in "intelligence" as a result of training experiences and/or growth they have become more realistic and effective in dealing with their occupational environment.
>
> Jastak, favors, "a definition of intelligence in ethically neutral terms. Biologically, intelligence represents the quanitity, variety, and speed of responses and their manifold relationships available to the individual. It is the integrative phase of the behaving organism. Psychologically, it is the level of maximum personality integration. It marks the individual's capacity for behavior, good or bad.
>
> The dynamic significance of intelligence is that everyone seems to strive for self-recognition in accordance with his own level of integration.
>
> Present measures of intelligence (I.Q.'s) do not represent the true level of integration. They are rough estimates of mental efficiency which is always below the theoretical capacity". (Jastak, 1959).

Intelligence gains in our study on a pre-post basis tend to support, Jastak's thinking about capacity or altitude scores. As our experimental population gained in "intelligence" the I.Q. gains were in the direction of the pre altitude scores or quotients. Also because the I.Q. increased we interpret this finding as an indication that the mental efficiency of the control group has increased. Furthermore our evidence suggests that the more disadvantaged person gains relatively more from the training experience. Hunt, has stated the converse position that, "The more severe the deprivations of experience the greater the decrease in the rate of behavioral development' (Hunt, 1961). How much individual deprivation can be overcome by meaningful experience remains to be clarified. Tyler presents a very coherent discussion on the topic of individual difference in intelligence and calls attention to the need for measuring techniques that imply a developmental process is being measured. (Tyler, 1965). The latest revision of the Stanford-Binet Intelligence Scale (Terman & Merrill, 1960) incorporated the deviation I.Q. into its rationale. This procedure produced an I.Q. which indicates the same relative standing at all ages. This example shows a trend, in the right direction is taking place which corrects for instability of I.Q. as a result of age change. (Pinneau, 1961). If we are to come to terms with developmental changes of ability, and its expression as measured by intelligence scales, then a constancy is needed in the measurement process. (Olson, 1959). We will also have to become more aware of the different types of disadvantagement that exist and the educational processes that can be invoked to prevent, modify or overcome this problem. Differential classification procedures are also needed to describe the differences that we observe and measure in a meaningful way from one part of the country to another.

Disadvantagement and Racial Differences

Much has been written about the relationship between racial difference and mental ability. (Klineberg, 1944) (Garrett, 1946) (Miner, 1956) (Ginzberg, 1966). The recent report, by de Neufville and Conner, on racial differences and mental test failures by draftees illustrates the magnitude of the problem. (de Neufville & Conner, 1966). Inherent in any discussion of this problem is the way and to what degree that the tests used might be considered unfair. Another important variable to be considered is the degree of disadvantagement that a racial group might have experienced in a given environment. For example both southern whites and negroes as groups have a greater chance of doing poorly on the Armed Forces mental tests than northern whites and negroes. In this example the relationship is explained by educational deprivation in the south for both negroes and whites. It is probable that other factors are also operating. However, there is no doubt that social disadvantagement does exist and creates a greater burden on some groups than others. For this reason we have made comparisons on a racial basis to show the effects of training as revealed by our test results. Table 16 shows that non-white trainees made significant gains over whites on a pre-post basis, on many of the key variables. We would interpret these findings to indicate that the training helped those persons with the greatest amount of disadvantagement to a greater extent. Table 17 shows that both subgroups of trainees profited and that many of the significant differences that existed at the beginning of the training period were no longer present at the completion of training. To further illustrate the meaning of racial differences, and to show how they are modifiable, we have included Table 18. This table is a comparison of white trainees and negro trainees where as Tables 16 and 17 showed comparisons of whites and non-whites. (non-whites as a category included persons of Indian and Mexican extraction as well as Negroes). Even though Table 18 does not include any statistical tests of significance it is possible to see that meaningful changes have occured for both white and negro trainees when compared to the non-trainees. These results strongly suggest that test scores should not be used primarily to make social judgments with value connotations that imply goodness or badness. Test scores should be looked upon as relative indicators of efficiency and a indice as to whether individuals need help in developing and expressing their potential. We should put emphasis on the intrinsic value of a persons existence when learning is to be encouraged.

TABLE 16

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison
White Trainees (X) vs Non-White Trainees (Y)
n=115 n=74
By Mean Scores

	White Trainees		Differ-Ence	Non-White Trainees		Differ-ence	Signifi-cance
	Pre	Post		Pre	Post		
WAIS Full I.Q.	94.48	98.90	4.41	89.01	95.31	6.30	.01
WAIS Altitude I.Q.	102.10	106.63	4.52	96.78	103.86	7.08	.05
WAIS Verbal I.Q.	94.76	97.27	2.50	90.81	95.01	4.20	.05
WAIS Performance I.Q.	94.84	101.41	6.56	88.31	96.62	8.30	.05
WRAT Reading S.S.	85.57	89.12	3.54	85.23	90.46	5.23	.05
WRAT Spelling S.S.	77.76	81.44	3.67	79.92	83.87	3.95	n.s.
WRAT Arithmetic S.S.	81.67	89.87	8.19	79.40	86.98	7.57	n.s.
GATB G	88.35	89.67	1.32	85.30	87.70	2.40	n.s.
Jastak S.D.	18.76	19.07	.30	17.92	18.79	.86	n.s.
Jastak Mean	90.78	97.63	6.85	83.01	91.51	8.49	n.s.
Hourly Rate	1.41	1.98	.56	1.17	1.82	.65	n.s.

TABLE 17

Austin and Sommerfeld

Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison
White Trainees (X) vs Non-White Trainees (Y)
T (1) = X (Pre) vs X (Post)
T (2) = Y (Pre) vs Y (Post)
T (3) = X (Pre) vs Y (Pre)
T (4) = X (Post) vs Y (Post)
n=115
n=74

	T (1)	T (2)	T (3)	T (4)
WAIS Full I.Q.	-2.71**	-3.11**	2.98**	1.94
WAIS Altitude I.Q.	-2.59**	-3.18**	2 78**	1.32
WAIS Verbal I.Q.	-1.50	-2.01*	2.10*	1.19
WAIS Performance I.Q.	-3.80**	-4.06**	3.49**	2.50*
WRAT Reading S.S.	-1.66	-2.23*	.15	- .57
WRAT Spelling S.S.	-2.07**	-1.85	-1.13	-1.20
WRAT Arithmetic S.S.	-5.31**	-4.16**	1.56	1.52
GATB G	- .46	- .67	.95	.61
Jastak S.D.	- .43	- .98	1.07	.35
Jastak Mean	-2.76**	-2.63**	2.84**	2.03*
Hourly Rate	-4.16**	-3.20**	1.60	.79

* Significant at .05 level of confidence (1.96 two tailed t).
** Significant at .01 level of confidence (2.58 two tailed t).
- Indicates direction of significance is towards the second factor or test result

TABLE 18

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison - Racial Differences

	Pre Training Data			Post Training Data		
Population Whites	n=115	Mean	S.D.	n=110	Mean	S.D.
Highest Grade Completed		9.28	1.57		9.71	1.78
WAIS Full I.Q.		94.54	12.17		99.02	12.14
WAIS Altitude I.Q.		102.13	12.43		106.79	13.52
WAIS Verbal I.Q.		94.79	12.68		97.37	12.26
WAIS Performance I.Q.		94.95	12.32		101.55	13.25
WRAT Reading S.S.		86.18	15.80		89.23	16.03
WRAT Spelling S.S. (n=112)		78.37	12.55		81.90	13.56
WRAT Arithmetic S.S.		82.01	10.79		90.03	12.51
GATB G (n=105)		89.75	16.60		+89.07	16.78
Population Negroes	n=62	Mean	S.D.	n=58	Mean	S.D.
Highest Grade Completed		9.83	1.54		10.44	1.99
WAIS Full I.Q.		87.00	11.29		93.32	11.19
WAIS Altitude I.Q.		94.58	11.97		101.50	13.22
WAIS Verbal I.Q.		89.14	11.78		93.84	11.75
WAIS Performance I.Q.		86.14	11.12		93.77	10.47
WRAT Reading S.S.		84.03	12.16		89.22	13.44
WRAT Spelling S.S. (n=59)		79.69	11.12		85.01	12.58
WRAT Arithmetic S.S.		78.69	8.55		85.67	12.16
GATB G (n=56_		79.75	14.63		++84.00	13.86

Control Group Illustration

Population Whites	n=60	Mean	S.D.	n=55	Mean	S.D.
Highest Grade Completed		8.90	1.62		9.21	1.82
WAIS Full I.Q.		94.61	10.72		97.29	11.48
WAIS Altitude I.Q.		101.96	11.46		105.16	13.00
WAIS Verbal I.Q.		93.83	11.18		93.94	12.32
WAIS Performance I.Q.		96.58	10.43		102.34	10.37
WRAT Reading S.S.		85.70	15.70		86.56	17.73
WRAT Spelling S.S. (n=55)		77.87	12.29		78.36	12.47
WRAT Arithmetic S.S.		80.58	9.33		80.35	9.68
GATB G (n=21)		89.33	13.23		0.00	0.00
Population Negroes	n=26	Mean	S.D,	n=23	Mean	S.D.
Highest Grade Completed		10.03	1.07		10.08	1.16
WAIS Full I.Q.		85.30	8.71		88.82	9.30
WAIS Altitude I.Q.		93.96	9.81		96.56	9.49
WAIS Verbal I.Q.		86.96	9.11		90.13	8.79
WAIS Performance I.Q.		85.26	11.18		89.86	12.23
WRAT Reading S.S.		83.34	11.66		+++84.22	10.19
WRAT Spelling S.S. (n=24)		79.20	12.20		80.22	11.71
WRAT Arithmetic S.S.		78.11	8.14		78.77	7.17
GATB G (n=10)		82.40	12.78		48.00	0.00

+ (n=67 ++ (n=32) +++ (n=22)

Disadvantagement and Retardation

Our findings suggest that people most easily improve upon the abilities that they have strength in. For example both the experimental and control groups gained more significantly in performance I.Q. (see Tables 3 & 4) than verbal I.Q. We suspect that biased ability patterns occur on a probability basis and are reinforced both negatively and positively by the experiences that a culture provides for people. A culture is also able to ignore, omit, and prevent many experiences from taking place. Logically, three sets of ability patterns can be postulated. These ability patterns are as follows:

1. Verbal Ability equals Performance Ability
   - a. High verbal ability and high performance ability
   - b. Medium verbal ability and medium performance ability
   - c. Low verbal ability and low performance ability
2. Verbal Ability greater than Performance Ability
   - a. High verbal ability and medium performance ability
   - b. High verbal ability and low performance ability
   - c. Medium verbal ability and low performance ability
3. Verbal Ability lower than Performance Ability
   - a. Medium verbal ability and high performance ability
   - b. Low verbal ability and high performance ability
   - c. Low verbal ability and medium performance ability

Disadvantagement is thought to occur and to effect people at all ability levels. We might add at this point the idea that environmental inefficiency can occur at all economic and ability levels. In this sense, high I.Q. alone does not provide protection against the effects of disadvantagement anymore than does low I.Q. alone guarantee educational and occupational failure. Environmental inefficiency or sufficiency are very individualistic and complex processes that consist of a constellation of factors. The right to select ones own learning environment may also be a critical component in determining whether success will occur or not. Our findings with low ability trainees are particularly relevent to some of these ideas. (see Tables 11 & 12).

The trainees that went through the entire program and who provided pre and post test results number 180, seventy three girls, and one hundred and seven boys. The first set of full scale I.Q. results revealed the following partial breakdown (see Tables F and G in Appendix C) of trainees with low ability.

		Girls	Boys
I.Q.	81 - 89	n 18 - 25%	n 19 - 18%
	80 - below	n 16 22%	n 15 - 14%

When it is necessary to consider the I.Q. as a measure of retardation or deprivation a serious problem immediately arises. The problem is whether I.Q. is thought of as being fixed, more or less unmodifiable, or very flexible and highly modifiable. Along these lines of thought our evidence suggests that for most disadvantaged youngsters behavioral modification is possible, particularly for those persons with lower I.Q.'s. In this sense disadvantaging factors probably effect persons with lower abilities more greatly and in turn compensating experiences have a greater impact.

The altitude concept that Jastak advocates is very helpful when put to the test of longitudinal measurements which verify the altitude estimate (Jastak, McPhee, Whiteman, 1963). From the stand point of social and occupational competency the first and second altitude scores should be compared with the second performance quotient. When this procedure is carried out only 5 females and 3 males from our original population of 16 girls and 15 boys, (I.Q.80 or below) can still be classified as retarded. (see Tables F & G in Appendix C). Neglected and/or constricted slow learners (dull normal persons) when included in a population that is described as disadvantaged may initially appear to be mentally retarded. There is a very easy solution that can always be applied to the problem of false negative findings. The solution is repeated or longitudinal testing. The words disadvantaged, impoverished, deprived, etc. should always be considered as warning signals that indicate the person or population involved has suffered in some way. This problem always requires detailed clinical and educational attention for an extended period of time.

Mental inefficiency may appear to be mental deficiency when disadvantaging circumstances have occured in the life of an individual. Meaningful stimulation and observational guidance can reveal, with time, the true meaning of I.Q. scores. Bloom appropriately states, "that general intelligence develops in an exceedingly "lawful" way and that the discovery of underlying nature of this development is worthy of our systematic efforts". (1964). The difficulty to date is that our systematic efforts have in fact been fairly unsystematic and limited on a longitudinal basis. The economic and social success that many so called school age "retardates" experience when they become adults should be evidence enough that some other very important factors are operating as well as I.Q. The multiple-factor approach to intellect and mental retardation is one example of good systematic effort. The work of Thurstone and Thurstone, (1965) Jastak, (1959) and Guilford, (1965) are examples of this effort.

Sarason and Gladwin speak of a lack of flexibility in our culture and of our total reliance on conventional schooling. (Masland, Sarason, Gladwin, 1958). The handicap of a circular definition of intelligence and I.Q. is very much related to and fostored by school concepts. In the section of this report titled Achievement, a more thorough discussion will be presented on this topic. The relativeness of the meaning of terms such as mental retardation, educable mentally handicapped, slow learning, etc., to set of school curriculum expectations has been presented in an unpublished study challenging the concept of a "dumb dropout". The implication being that "dropouts" are really "push outs", persons rejected by the school culture (Swanson 1964). When mental retardation is considered as more of a working concept of the school culture then the general adult society a new perspective is gained. Whether the school culture will ultimately project this concept into adult society will largely depend on how much credibility industry, business and government place on school values. (Havighurst & Neugarten, 1957).

Aptitude Measurements

Throughout this study for comparitive purposes we have reported General Aptitude Test Battery Intelligence (GATB G) results. This instrument, as described in earlier sections, was originally administered by the Michigan Employment Security Commission to those potential trainee applicants who the M.E.S.C. staff felt could read adequately enough to take the tests. For persons unfamiliar with this instrument (GATB) a detailed explanation and description is included in Appendix A. Approximately 172 trainees and 34 non-trainees were tested by the M.E.S.C. before the training program began. Testing was with Form A of the GATB, B-1002 series. Retesting at the conclusion of the training program was conducted with approximately 110 of the trainees with Form B of the GATB, B-1002 series. The difference between the number tested initially and post testing was due to program dropouts and graduates with extremely low reading scores who were excused from this phase of the testing program.

To illustrate the full meaning of the GATB scores we have prepared two tables. Table B, which is located in Appendix C of this report is a summary of all of the GATB mean scores that the various experimental sub groups obtained on a pre-post basis. Table 19 shows the mean scores for the trainees and for the persons in the control group who were given the GATB. Even though the control group number was small, a comparison of the two groups (control and experimental) scores indicates that the mean differences were non-existent or small with the exception of the finger dexterity factor (F) and the manual dexterity factor (M). The experimental group on these two factors scored very low in comparison to the partial control group. It is of interest that on a experimental group pre-post gain basis, finger dexterity (F) increased by 16 points, manual dexterity (M) increased by 14 points, motor coordination (K) by 9 points and clerical perception (Q) by 8 points. Tests of significance also show that two of these same factors were sensitive to and indicitive of change (see Table B). Factor K, which measures motor coordination, demonstratrated significant difference at the .05 level of confidence or better between; I.Q.lower subgroup vs upper subgroup; age groups, 16-17-18 vs 19-20-21, in favor of the 19-20-21 age group; and K in combination with N, the numerical factor, employed vs unemployed, both factors in favor of the employed group; and K in combination with S the spatial factor, program graduates vs program dropouts in favor of the graduates. Factor S also indicated significant differences existed for a pre-post test comparison of altitude I.Q. lower subgroup vs upper subgroup, in favor of the upper subgroup; as might be expected the same finding was obtained on a comparison of the I.Q. lower subgroup vs upper subgroup, in favor of the upper group. Factor Q, which measures clerical perception showed a significant difference exists for reading, low subgroup vs upper subgroup, in favor of the upper group. These findings are all interesting and helpful in illustrating the changes which occured. Motor skills appear to have a prognostic value, particularly as an indicator of maturity and social competency. However more research is needed on these problems before a definite conclusion can be made.

The findings that we have reported for the GATB are also helpful in understanding the problems that are involved in using this instrument with a disadvantaged population. The major difficulty with this battery is that it is dependent on the skills that the disadvantaged person is usually lacking, i.e., reading ability or good verbal academic background. We suspect that the G, V and N factors are more closely related to achievement skills, similar to those measured by the Wide Range Achievement Test, than to verbal abilities as measured by the Wechsler Adult Intelligence Scale. In any case the GATB

TABLE 19

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental And Control Groups Comparison
Before And After Training
By Mean Scores

Pre Training Data	Experimental Group		Control Group	
General Aptitude Test Battery	n		n	
GATB G (Intelligence)	172	86.7	34	86.5
GATB V (Verbal)	172	85.8	34	85.9
GATB N (Numerical)	172	84.5	34	85.2
GATB S (Spatial)	176	93.6	36	95.6
GATB P (Form Perception)	167	93.7	34	95.9
GATB Q (Clerical Perception)	167	90.1	34	88.8
GATB K (Motor Coordination)	170	90.1	36	91.7
GATB F (Finger Dexterity)	174	76.8	36	85.2
GATB M (Manual Dexterity)	174	84.4	36	91.1

Post Training Data	Experimental Group		Control Group
General Aptitude Test Battery	n		
GATB G (Intelligence)	110	88.2	Not Included In Post-testing Schedule
GATB V (Verbal)	111	86.9	
GATB N (Numerical)	110	88.8	
GATB S (Spatial)	111	99.6	
GATB P (Form Perception)	—	—	
GATB Q (Clerical Perception)	113	98.3	
GATB K (Motor Coordination)	107	99.3	
GATB F (Finger Dexterity)	93	92.6	
GATB M (Manual Dexterity)	88	98.5	

does have limitations which deserve consideration, particularly with a disadvantaged population. It has been reported that research is underway to develope a non reading edition of all nine GATB aptitudes (Levitan, 1965). Group intelligence, aptitude, and achievement tests which are dependent on reading skill too often measure just reading skill. (for additional information on the GATB see the description in Appendix A).

Language And Mental Ability

Verbal expressions of ability are often dependent on language skill and facility. (though related the two processes are different). For example in an earlier comment regarding the rejection of the fourth hypothesis, which dealt with low and high I.Q. as a predictor of improvement, we stated that an academic or language ability difference was operating (see Tables 11 & 12). The lower third sub group made significant gains in the areas of full I.Q. and verbal I.Q. in comparison to the upper third sub group on these two dimensions. However, the upper third sub group gained significantly on reading and arithmetic on an inter group comparison while on an intra group pre-post comparison the lower group improved significantly only on arithmetic. The upper group gained significantly on reading, spelling, and arithmetic on a pre-post basis. Essentially stated, achievement or academic gains do not directly influence verbal ability nor does a verbal ability gain automatically reveal itself in the academic area.

Reading and spelling skills, if limited, can effect the expression of intellectual abilities particularly with verbal types of intelligence tests that are dependent on reading. Many investigators have been concerned with language skills and their influence on intelligence and education as they are related. Sarason reports on numerous studies regarding language and intelligence, particularly bilingualism studies, which consider the school, i.e. the educational setting as a static factor (Masland, Sarason, Gladwin, 1958). Could it be that language development, for some persons, will have to be viewed as a static factor and that intelligence and the educational setting are the factors which are most modifiable. Thirty nine of the sixty lower ability trainees cited above did have a corresponding low reading quotient. However, it is important to recognize that twenty one persons from the same group with low ability were not low in reading skill. Newbrough and Kelly touch directly on the problems of reading epidemiology and the vital need for record-keeping procedures. (Money, 1962). Accountability for learning is a new phenonemon or concept for the American public schools. Yet if we are to understand the parts that language, intelligence, and the educational process play in relation to the disadvantaged we must keep records and be held accountable.

Summary

Our findings indicate that ability has an envelope or band like quality and that if a person is in a beneficial environment, for that person, and is given adequate support and nurturance he then will have a greater chance to demonstrate environmental efficiency. This efficiency in part can be measured on a longitudinal basis, and will reveal the envelope or band of abilities that a person possesses. When we think of intelligence as consisting of a package or envelope of abilities which vary from one person to another then we are also obligated to try and understand the meaning of the variation and the conditions or atmosphere which influence the expression of a given persons ability over a period of time. What is a disadvantaging environment? It has been stated that the following conditions being out of school, being out of work, living in a seriously

impoverished home, and being unable to benefit from regular occupational training, constitute disadvantagement (Kranz, 1965).
It is fairly easy to see how being out of work and out of school can contribute to a lack of purpose and/or means of expressing one's self purposefully as a worker or a learner. However, these conditions can exist without being coupled to a poverty stricken home as poverty stricken people do work in many instances. In this age of specialization it is also difficult to state exactly what regular occupational training is and where it should take place. Just being out of school or out of work except for a brief period of time is a disadvantaging experience for many persons. If a person also lives in an impoverished setting and cannot benefit from a training experience, which was the case for some of our trainees who dropped without good cause, then the degree of disadvantagement is likely to be more serious. It is apparent that disadvantaging experiences have to be qualified more clearly. We need a valid scale of disadvantagement in order to appreciate the impact and effect of training.

The problem here is analogous to the difficulty Selye cites in defining the term stress which, "is meaningful only when applied to a precisely defined biological system". (Selye, 1956). We could substitute the word psychological for biological and think of disadvantagement as being the stressor in the analogy.

Our concepts of intelligence are broad in some instances of application, but narrow in others. An intelligence quotient often has been thought of as having properties that can be averaged and understood only in an abstract way. This is a meaningful and helpful process if we have to think in terms of a group or many groups or divisions of people. This report represents this type of thinking to a large degree. No real harm is ever meant by going from parts to wholes as a thought process. The labeling of wholes and parts by a rank ordering value process which implies a superiority or inferiority status however is harmful. High (averaged) I.Q. as opposed to low I.Q. (also averaged) can easily be construed to be synonomous to goodness or badness. It is unfortunate that we are so easily able to make this type of a shift. This type of value procedure is just what makes many people critical of our contemporary concepts regarding intelligence. Another short coming that must be faced is to learn to think of an I.Q. as a starting point and not as an end. Many people are blamed falsely for being something that they really are not when test results are used in this manner. This happens even with individual tests. Predictability is a game that is perhaps played too seriously with test scores such as I.Q.'s. It is obvious that I.Q. is only one aspect of personality which may or may not contribute to social competency and that academic performance is only one expression of competency. Are these comments to be taken as a request not to test? No, for tests are helpful in learning how to suceed in helping the disadvantaged. (Edgerton & Sylvester, 1966). This point is central in that tests should be used to help and understand so as to help again more effectively in the future. Tests then are a starting point and I.Q., because it is an average, should be examined in relation to its parts when we think of individuals. When considering groups we look for commonalities while considering individuals we look for departures from commonality. These variations are referred to as individual differences. They often seem to be puzzling bits of behavioral uniqueness yet they help to define us as persons, make us recognizable to one another, and evoke interpersonal behavior. This is the nature of individual differences. In the measurement of intelligence, mental abilities which are different can provide a way to understand individuals and how they depart from commonality. The next section of this report should be considered as an extension of this section but with emphasis on the individual uniqueness of the trainees.

PART FOUR

PERSONALITY

In the previous section we discussed individual differences and the uiqueness of persons in terms of the range of ability that they express. Any expression of ability is also an expression of behavior. We can place emphasis on behavior solely in terms of what it reveals about ability or we can look at it, especially ability clusters, and come to know something about a persons general behavioral process. This of course is not a new idea in itself as Wechsler (1958), Rapaport (1945-46), Schafer (1948), and Jastak (1959), can be cited as just a few of the clinically experienced and orientated authors who have advocated the use of test score pattern analysis. From an educational point of view test score patterns have been considered by Altus (1956), Kallos, Grabow and Guarino (1961), as having meaning. These investigators, particularly the clinicians, have not been lacking for critics who in many cases are not only vociferous in their criticism but hostile and derogatory in a way that seems hardly justified. (Buros, 1965).

The problem of scientific disciplines being nomothetic and not idiographic has been much discussed. A most illuminating presentation of the dilemma is made by Allport (1963). In the area of clinical prediction versus statistical prediction Meehl (1954) has shown important considerations exist for probability inferences. Our concern about personality and ability as behavior which may be modified through an appropriate learning situation is dependent on a group probability system. This concern represents no disrespect to the individual for his chances of benefiting are greater if our inferences are correct about his assigned group. This is a most important idea for if we know nothing about the nature of a group and everything that we possibly can about an individual what service can we really be to that individual if we place him in a learning group which is inappropriate for his learning capability? Much is known and written about "dropouts" but practically nothing is known about the groups they have left: groups to which they were invariably assigned to in the first place by professionally trained persons. (Cervantes, 1965).

Clinical understanding can be coupled with group and statistical understanding so as to better comprehend both the group and the individual as dynamic organisms. The work of Leary and his colleagues (1957) is especially meaningful in providing a functional theory of personality and a methodology to understand the probable interpersonal behavior and relationships of an individual to an assigned group. For example the probability statement that 3 out of 4 hypernormal patients, seen a psychiatric clinic, can be expected not to go into psychotherapy gives a good idea of the practicality of a therapy program for these types of persons. If we consider psychotherapy as being close to a verbal learning setting then should we bemoan the fact that poor verbal learners exist or should we seek out different learning situations and strategies for them. Also if we have to assign a number of individuals to a learning program who have high withdrawal probability and the instructors are aware of this probability do we not also change the instructors expectational process? For instance if an instructor has a group of persons with learning problems and he understands that only a few can be helped by the usual remedial procedures will he be as quick to use blame, threat of failure, and interpersonal hostility upon those group members who respond poorly to the learning process. The premise being that such behavior from an instructor only convinces many poor learners all the more of the futility in trying to learn. We also see such instructor behavior as being perfectionistic and defeating to the achievement motive that the learner holds. (McClelland. 1961). In time we would hope that a teacher will come to know which values a given learner needs to be exposed to so as to encourage learning. Conversely, the teacher will come to know what values defeat learning. (Lafferty, 1963). The learning experience itself also demands certain skills and abilities and will provoke the learner if he has the required abilities differently than if he doesn't have them. Thus, we find teacher behavior and values counting only in some cases and in other cases student ability and values being the primary variables. What is operating here is an approval-disapproval process which is interpersonal when a self-other interaction is required and a self-self criticism or evaluation occurs when only skill is required, that is, an estimate that I can do this or I can't do this or I will try and see if I can do this. In many instances the two combinations blend together depending on the situation. Self concept is always expressed through interpersonal behavior and in the learning process. Our understanding of self concept-beliefs generally is gained by clinical process. However, individual beliefs though subjectively expressed for personal purposes, whether known or unknown to the expressor, can be measured objectively. The way this is done is by using a logical but synthetic method of thinking (Hartman. 1967).

Ideas like self concept, personal worth and social worth are all synthetic in that they are abstract definitions yet they are based on a logical premise or frame of reference. However, just as was the case with physics which developed as a science only in relation to mathematical progress and thought so psychology also will develope in relation to synthetic thought processes. These processes when they are found will be demonstrative of and easily coupled to psychological principles. It is believed that the "self" is the kind of a synthetic thought or concept that we have discussed. Furthermore, as ways are found to quantify and measure various facets of the self. it will be possible to redefine and better illustrate the concepts that are inherent in the whole idea.

Functional Personality Theories And Methodology

The previous discussion illustrates clearly the need for applied systems or methodologies. We have used several strategies to measure the impact of training on the personality process of our trainees. These strategies are functional in that measurement of some of the theoretical aspects of personality is possible. We have relied heavily on the thinking of our consultant, Joseph F. Jastak. with regard to his theory and method of clinical factor analysis with the Wechsler Adult Intelligence Scale subtest scores and the Wide Range Achievement Test, reading standard score. Comprehensive directions for a method of clinical factor analysis can be seen in Appendix A. Actually clinical factor analysis as will be shown in greater detail is a ranking and regression procedure which can be used as either a closed or open system. We have used the system in both ways to show relationship and disparity. When ranking WAIS and WRAT ability subtest scores (12) and comparing these ranks against known clinical groups, the closed system is being used. Logically if the system is carried to the extreme only a certain number of categories can occur anyway as the mathematical potential of a ranking procedure is definitely limited. Rank categorization can be high, medium. low, and positive or negative. For research purposes we categorized all of the trainees by the highest positive rank they obtained. The actual correlation in this procedure may have been low for an individual but we believe a positive coefficient does provide the best indication of a behavioral direction or category, We have used the following categories;

1	2	3	4	5	6
Normal	Aggressive	Fearful	Affective	Autistic	Disorganized
Hysteroid	Unmotivated	Anxious	Elated	Withdrawing	Impulsive
Overresponsive	Irresponsible	Hypochondriac	Depressed	Suspicious	Perseverating

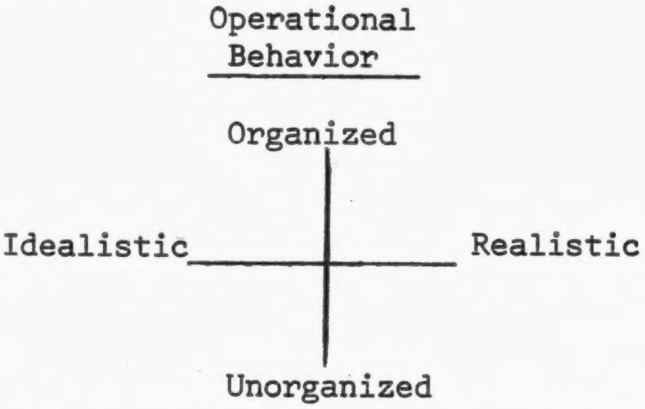
Not all categories are represented here. Categories that are more antithetical to those described above probably do exist along with categories that would fall between the six that are listed. However, it is possible to see that a continuum does exist in that the categories from 1 to 6 represent high to low behavioral organization. Integration or organization of behavior is usually thought of as being a capability of the self. Stability of self or self control may be less of a volitional process for some persons than we generally like to assume. Because some of our trainees obviously did not have high positive coefficients with any categories we felt that an additional check would be helpful to reveal the degree of masking that an arbitrary classification procedure produces.

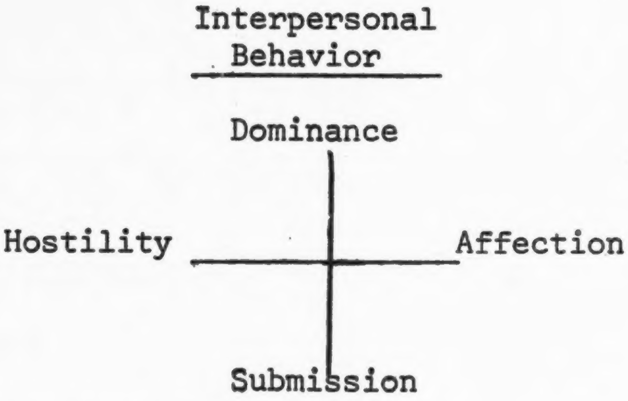
Some previous research by this author with the junior high level of the Jastak Test of Potential Ability and Behavioral Stability, (1959) revealed that when studying groups that are different in learning capability it is often helpful to average the motivation, language, reality, and psychomotor factor scores to see the patterns that are evident and to note how they vary. This procedure was also routinely used in this study. It is the open system that we previously spoke of. It is open in the sense that an individual is not directly compared against known clinical groups. The outcome of this procedure is relative in that an individuals factor scores can all be high, medium, or low or any combination thereof. In looking at these scores as a profile or pattern the relationship of one score to another takes on clinical importance. In calculating a set of logical patterns for a high-low comparison with the Jastak factors of language, reality, psychomotor, and motivation it was soon apparent that only six combinations are possible. They are as follows:

A	B	C	D	E	F
High	High	High	High	High	High
Language	Language	Motivation	Reality	Reality	Reality
Motivation	Psychomotor	Psychomotor	Motivation	Language	Psychomotor
Low	Low	Low	Low	Low	Low
Psychomotor	Motivation	Language	Language	Motivation	Motivation
Reality	Reality	Reality	Psychomotor	Psychomotor	Language

These patterns constitute behavioral types or styles. The very obvious continuum that is revealed is in the area of reality, low to high. With this system it becomes possible to not only use factor averages but to also cross type and check the category differences which we assumed to exist because of an arbitrary classification. We also have a way to understand, without alarm, differences which seemingly should not be. For example on a probability basis we could expect 16 3/4% of our population, if it were a random and general population, to fall in each pattern type. This does not happen for two reasons: (1) we do not have a cross section of the population because we have a select sample of the population which should be the case and (2) other factors that we have either not measured or taken into account are operating. (See Tables H thru O in Appendix C.)

With two continuums it is possible to use a variation of the Haskell coaction principle. We have come to think of the interaction of the organizational aspects of behavior with the reality structure of personality as being operational behavior. The methodology employed is very similar and can be compared with the Leary, (1957) system. Whereas Leary sees personality in interpersonal terms we see personality in operational terms. The example below shows how personality forces produce different behaviors.

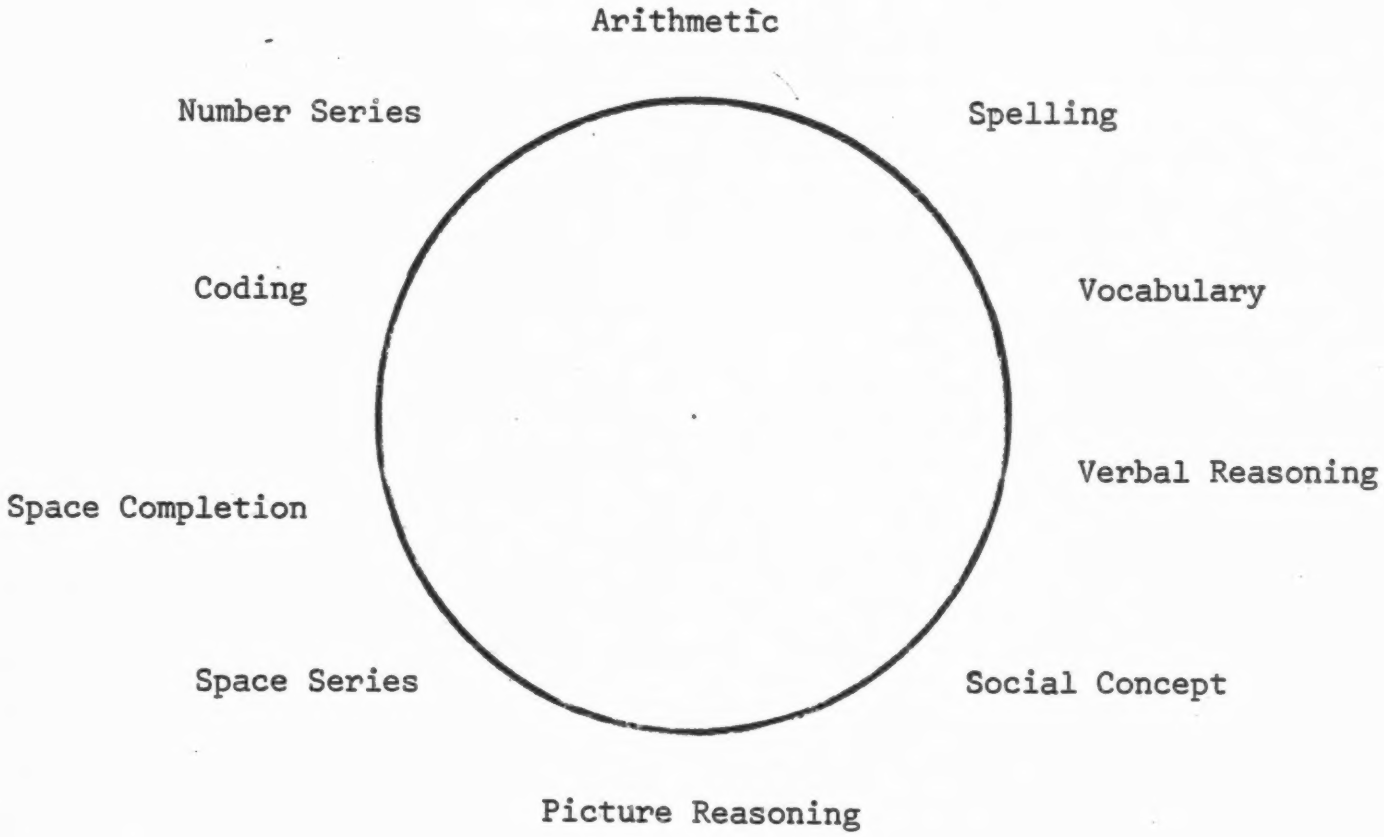


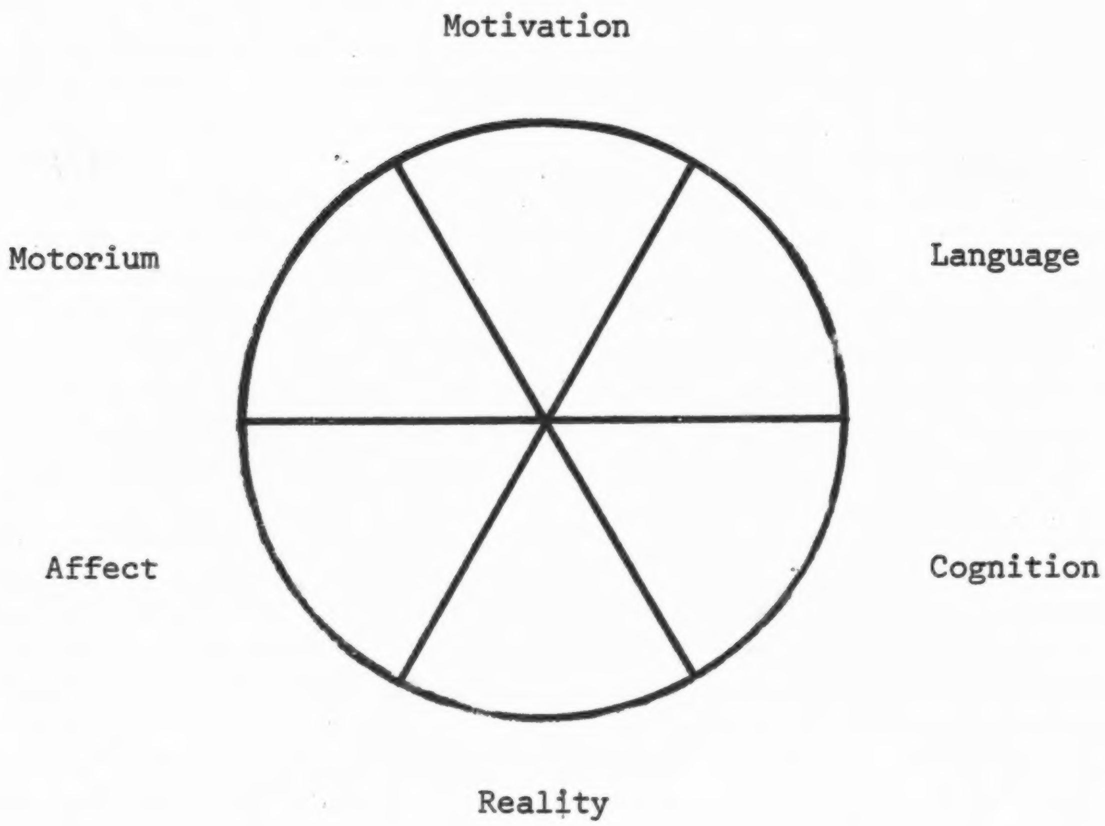


Both types of behavioral outcomes have tremendous importance to educator-psychologists. Educational programs are going to come under close scrutiny in the future to determine the effects they have, both negatively and positively, on large numbers of people in preparing them to be operational and interpersonal in meaningful ways. Is there overlap between Operational behavior and Interpersonal behavior? The answer tentatively appears to be yes and no. We will show later in this report the common values, expressed in interpersonal terms, that are held by trainees in the four quadrant areas or divisions which are made possible by the use of a coaction chart or grid.

To understand operational behavior as a concept it is helpful to understand some of the foundations from which the idea is dependent on. As reported earlier, Jastak and others have used measurement procedures to help conceptualize a clinical classification system. This system is similar to, and perhaps can be considered as a psychological answer to, Kraepelinian or psychiatric classifications. It is of interest that two interpersonal theorists, Leary, (1957) and Schutz, (1958), both show comparison of their functional methodologies with some aspects of the older psychiatric syndrome classifications. The basic purpose of the syndrome type of a diagnostic system was to indicate a state of being and to give a very tentative prognosis. The state of being was indicated by the degree of function or amount of maladaptiveness that a person presented. In this sense the primary features were an individuals degree of self awareness and his organizational ability. Integration, or a lack of the same, is better revealed through specific applicative efforts than through interpersonal processes A persons efforts in solving or performing a series of tasks always requires integration of abilities in an exacting manner. Also the effects of self organization through performances can usually be measured in a fair but controlled manner. However, the resources that a person has which can be applied to a task do effect his performance and have to be considered in a scientific way. For example, it is possible to measure and consider the performance of two foot racers very accurately in terms of time and distance which provides an indication of speed. Repeated performances over a period of time will also reveal a range of capability, some performances will be better than others on different days. Finally because we can also measure the stature and energy expenditures of the racers that is done too. If we then compete these racers against one another in a series of races and find one can always win, though both race to the best of their abilities, then we have a problem. What is the explanation or reason, yes, one has very short legs and the other very long legs. How they will feel about one another will depend on how they value winning or losing and how they conceptualize the idea of fairness or unfairness. Hence, we find, (1) being a poor loser or a good winner is an interpersonal value phenomenon; (2) being a fast or slow racer depends on who races whom and what their physical capabilities are; (3) being a hard or energetic runner depends on the physical and psychological capabilities of the individual. Obviously there is some interplay of variables in the three outcomes. However, the analogy is meant to show that if we are interested in the organizational aspect of an individuals' personality structure we should then study the behavior which best reveals this process. We believe this is the best key to understanding a functional personality theory and methodology.

Specific abilities, as clusters in harmony with one another, that best reveal organizational capability are reflected in the WAIS subtests of comprehension and similarities in the verbal area and in the subtests of digit symbol, object assembly, picture completion, and block design in the performance area. The other subtests that we have not mentioned are equally important because, in combination with the above subtests by being lower and less relied on, they do not hinder the expression of organizational behavior. Organizational behavior can be blocked and/or modified by affective and cognitive processes. In this sense the globular aspect of Jastak's theories is especially important. The illustrations below demonstrate the globular nature of behavior as expressed through abilities (Jastak, 1959).





Reality processes are very important in our concept of operational behavior. Jastak states that, "the reality cluster measures the abilities to do the right thing in the right place at the right time for the right reason. It determines how relative a person is in relationship to the situation they are meeting." He goes on to indicate, "the reality area involves self image. A low reality score would show fear of the environment, a misconception of what is going on in the environment, suspiciousness, and misinterpretation of pains, a misinterpretation of illness, and a fear of sickness. Some people also would have learning difficulties if they misinterpret too many things." Jastak holds that too much comprehension particularly in connection with low motivation and low psychomotor efficiency can be socially harmful to the individual in that he will invariably be unstable and unproductive. Knowing the score is not the same as leading the band or getting the job done. Reality processes are shown on the WAIS through the comprehension and similarities test in the verbal area and by high scores on the performance tests. The reality cluster is also known as the ortho cluster.

Other investigators have been concerned with the relationship of self concept and reality processes. In a classic observational report of developmental function, Piaget (1954) describes how awareness emerges in the young infant. He discusses the implications of causality from the first months of life to the time of puberty. Objective-subjective and logical-magical considerations are held to be sensorimotor outcomes which effect self concept formation. An early investigator of realities inherent in self values was Prescott Lecky (1945) who explained learning difficulties as being more often the outcome of resistances arrived at by faulty self rationalization than by lack of ability. Lecky theorized that "self consistency" is a central personality process which for the sake of integration makes it possible for an individual to hold beliefs which may be unreal. A more recent investigator of beliefs that are used to deny reality is Albert Ellis (1961). He discusses the processes by which thought and language effect the rational-emotive behavior of people. Ellis holds that there are many irrational beliefs that can form a basis for self-defeating behavior. He has enumerated and defined a dozen or more of these irrational ideas. Others have also touched on casuality as it effects learning and behavior. Ojemann (1959), Symonds (1951), and Bruner (1951) have made significant contributions to our understanding of the importance that beliefs have upon the interactive-reality process. Realistic thought processes in youngsters appear to also be effected by the group reference phenomenon in that youngsters at upper or lower rank order positions in a group are likely to hold more or fewer irrational attitudes. Maslow (1962) discusses "being-cognition" as a vital aspect in the self-actualization process. A new instrument by Hartman and Cardenas (1967) may be very helpful, because it employs a new and different conceptual strategy, in solving some of the issues regarding values in the self-learning-reality spheres. Again, as our methodology in this area improves, so will our theories.

Personality Findings

Our findings in the area of personality change are shown in Tables 20 and 21 for the experimental group, and in Tables 22 and 23 for the control group. These tables are coaction charts which illustrate operational behavior as measured by the Jastak clinical factor analysis and rank correlation analysis with diagnostic categories.

The numbers in each row and/or column of the charts represent actual trainees. In addition to the numerical counts percentages have been calculated for each quadrant total. These percentages are based on the total n which is different for each chart, and so they do not represent equal values.

The charts are illustrative and even though significance is evident, the real purpose of the charts is to show the operational behavior in our groups and the way it can be modified through training experiences and/or developmental process. The measurement design is also central and of the utmost importance because the same data (WAIS and WRAT) was used to prove or disprove the study hypotheses as reported in the section titled "Basic Findings". In this sense the data is as objective as any data that currently can be obtained. The methodology, and rightfully so, will be the key issue as to the appropriateness of the findings. It should also be noted that the descriptive adjectives in the Jastak behavioral categories are not to be considered as being diagnostic in themselves. A positive or negative value connotation is not intended. What is intended is a behavioral direction or tendency. Psychologically speaking, we feel that all behavior has meaning and purpose, be it good or bad. The charts generally indicate that both control and experimental groups were more organized and realistic than they were unorganized and idealistic. On a pre-post test basis both groups became even more organized and realistic than they originally were. Increased self awareness, more practical sense, and better method may be the outcome of maturity as well as experience (see Tables P and Q in Appendix C). As we will indicate again in our discussion in the section "Occupational Status" regarding income gains, the control group during the training period was also maturing and gaining experience. Whether the experience is directly equivalent to training is difficult to determine in some instances. However, on some variables distinct differences between the groups are easily discerned. Sex differneces are quicly revealed (see

TABLE 20

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison
Pre-Training

Jastak Factor Patterns

Jastak Behavioral Categories	A	B	C	Quad-rant Total	D	E	F	Quad-rant Total	Total
	High Language Motivation	High Language Psychomotor	High Motivation Psychomotor		High Reality Motivation	High Reality Language	High Reality Psychomotor		
	Low Psychomotor Reality	Low Motivation Reality	Low Language Reality		Low Language Psychomotor	Low Motivation Psychomotor	Low Motivation Language		
Normal Hysteroid Overresponsive	1	1	9		2	3	30		46
Aggressive Unmotivated Irresponsible	3	0	1		10	17	24		55
Fearful Anxious Hypochondriac	8	16	6	45 24%	0	13	5	104 55%	48
Affective Elated Depressed	4	2	1		0	0	1		8
Autistic Withdrawing Suspicious	5	0	1		1	4	0		11
Disorganized Impulsive Perseverating	3	0	7	23 12%	6	5	0	17 9%	21
Total	24	19	25		19	42	60		189

TABLE 21

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison
Post-Training

Jastak Factor Patterns

	A	B	C		D	E	F		Total
Jastak Behavioral Categories	High Language Motivation	High Language Psychomotor	High Motivation Psychomotor	Quad-rant Total	High Reality Motivation	High Reality Language	High Reality Psychomotor	Quad-rant Total	
	Low Psychomotor Reality	Low Motivation Reality	Low Language Reality		Low Language Psychomotor	Low Motivation Psychomotor	Low Motivation Language		
Normal Hysteroid Overresponsive	2	3	9		5	9	42		70
Aggressive Unmotivated Irresponsible	0	0	0		11	20	22		53
Fearful Anxious Hypochondriac	4	8	7	33 18%	1	5	6	121 67%	31
Affective Elated Depressed	2	1	3		1	1	1		9
Autistic Withdrawing Suspicious	5	1	0		1	2	0		9
Disorganized Impulsive Perseverating	3	0	1	16 9%	1	2	1	10 6%	8
Totals	16	13	20		20	39	72		180

TABLE 22

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Control Group Comparison
Pre-Training

Jastak Factor Patterns

Jastak Behavioral Categories	A High Language Motivation Low Psychomotor Reality	B High Language Psychomotor Low Motivation Reality	C High Motivation Psychomotor Low Language Reality	Quad-rant Total	D High Reality Motivation Low Language Psychomotor	E High Reality Language Low Motivation Psychomotor	F High Reality Psychomotor Low Motivation Language	Quad-rant Total	Total
Normal Hysteroid Overresponsive	0	0	6		1	0	13		20
Aggressive Unmotivated Irresponsible	0	0	0		9	8	16		33
Fearful Anxious Hypocondriac	1	4	2	13 15%	1	1	2	51 57%	11
Affective Elated Depressed	1	0	3		0	1	0		5
Autistic Withdrawing Suspicious	1	1	1		0	0	0		3
Disorganized Impulsive Perseverating	6	0	1	14 16%	4	3	3	11 12%	17
Totals	9	5	13		15	13	34		89

Tables R, S, T, and U in Appendix C) in that males as a group are more realistic than females who are more idealistic. This is a reassuring finding for practicality has always been a masculine virtue and appreciation a feminine quality. To further illustrate male-female differences we have also prepared Tables 24 thru 27, with graphic profiles, which show a percentage item analysis of the Interpersonal Checklist ratings. (See Appendix A for a detailed description of the Interpersonal Checklist.) The Interpersonal Checklist was administered only to those trainees whom it was felt could read adequately enough to respond to the instrument. For this reason not all trainees are being discussed in our presentation on the Interpersonal Checklist ratings. These ratings are subjective and are believed to present a measure of collective value concept. The actual self description and the ideal self description can be viewed as those personal and social beliefs, in an interpersonal context, that the trainees wish to express in a public way. Leary (1957) describes this level of expression as conscious communication and points out that private feelings and values may be in contradiction to openly reported principles. Nevertheless, we do gain an understanding of the standards that the trainees wish to express publicly. In a collective way, when forty percent or more of the trainees check an item as being self applicable, a form of consensual validation is operating and a group profile is evident. In this sense we are relatively sure that common values do exist for our trainees which are powerful as forces of "rightness and wrongness". These value guides do effect the conduct of the trainees in various ways. The personality processes of each trainee is different from every other trainee and yet in some ways all of the trainees are similar. It is publicly expressed similarities that the Interpersonal Checklist reveals best. These surface measurements are akin to the social and personal value processes which Hartman (1967) describes as systemic and extrinsic. The same terms may also be intrinsic to a given trainee but of this we cannot really be sure. With the Interpersonal Checklist and the conceptual frame that it represents we can assume that a self concept rating in both an actual and an ideal context is a value expression with tenses of, "I believe this to be and I believe this would be good to be and I want you (also they) to know and believe that this is part of what I believe."

Omission is also revealing of value in that any statement or adjective can be considered as suggested value and if rejected signifies that, "this is not what I choose to believe of myself now or what I believe would be good to become or what I would want you (also they) to believe that I believe." Unexpressed values are strongly effected by the measuring instruments and the relationships that exist between the trainee and the examiner and/or staff members. Role considerations strongly influence what is felt to be right (good) or wrong (bad) values largely because of authority-affiliative positions which formal-informal structures bring about. A common concern in an authority figure relationship is whether the authority figure will or will not blame or praise a person for being wrong or right. Being a good person is not the primary issue here as it is in an affiliative relationship where being wrong or right is usually of less importance.

Our findings indicate in the area of expressed value that disadvantaged youth differ from other population samples on the Interpersonal Checklist (Leary, 1957) (LaForge, 1963). They are less verbal and expressive, hence, the number of items checked is lower on the average and percentages for intensity levels are also lower. For these reasons we have presented our findings in a manner that emphasizes the items rather than the sums which can be derived from them and applied to norms which produce summary plots. (See Appendix A,

TABLE 23

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Control Group Comparison
Post--Training

Jastak Behavioral Categories	A High Language Motivation Low Psychomotor Reality	B High Language Psychomotor Low Motivation Reality	C High Motivation Psychomotor Low Language Reality	Quad-rant Total	D High Reality Motivation Low Language Psychomotor	E High Reality Language Low Motivation Psychomotor	F High Reality Psychomotor Low Motivation Language	Quad-rant Total	Total
	Jastak Factor Patterns								
Normal Hysteroid Overresponsive	0	0	3		6	2	19		30
Aggressive Unmotivated Irresponsible	0	0	0		8	8	18		34
Fearful Anxious Hypochondriac	1	4	2	10 12%	0	0	1	62 77%	8
Affective Elated Depressed	0	1	2		0	0	0		3
Autistic Withdrawing Suspicious	1	0	0		0	0	0		1
Disorganized Impulsive Perseverating	0	1	0	5 6%	2	2	0	4 5%	5
Total	2	6	7		16	12	38		81

TABLE 24

The Interpersonal Checklist Item Analysis

Experimental Group Males Actual Rating Sample n=63
(Self Concept Expressed Value)

Pre	Post		Pre	Post		Pre	Post		Pre	Post	
44%	37%	well thought of	16%	21%	often admired	16%	13%	always giving advice	37%	40%	tries to be too successful
33%	35%	makes a good impression	41%	46%	respected by others	11%	11%	acts important	10%	6%	expects everyone to admire him
48%	60%	able to give orders	19%	13%	good leader	3%	6%	bossy	8%	13%	manages others
13%	13%	forceful	56%	57%	likes responsibility	6%	6%	dominating	2%	2%	dictatorial
60%	62%	self-respecting	37%	51%	self-confident	6%	5%	boastful	0%	2%	somewhat snobbish
51%	49%	independent	30%	35%	self-reliant and assertive	29%	32%	proud and self-satisfied	3%	2%	egotistical and conceited
81%	79%	able to take care of self	21%	24%	businesslike	2%	3%	thinks only of himself	2%	2%	selfish
32%	32%	can be indifferent to others	59%	56%	likes to compete with others	5%	3%	shrewd and calculating	5%	2%	cold and unfeeling
65%	70%	can be strict if necessary	46%	64%	hard-boiled when necessary	18%	18%	impatient with others' mistakes	6%	10%	sarcastic
33%	38%	firm but just	30%	37%	stern but fair	11%	18%	self-seeking	3%	5%	cruel and unkind
83%	92%	can be frank and honest	13%	11%	irritable	22%	18%	outspoken	18%	24%	frequently angry
8%	3%	critical of others	62%	49%	straightforward and direct	10%	14%	often unfriendly	6%	5%	hard-hearted
76%	84%	can complain if necessary	29%	22%	resents being bossed	6%	8%	bitter	6%	6%	resentful
21%	24%	often gloomy	13%	16%	skeptical	11%	10%	complaining	0%	0%	rebels against everything
49%	59%	able to doubt others	30%	22%	hard to impress	21%	24%	jealous	27%	29%	stubborn
38%	30%	frequently disappointed	29%	30%	touchy and easily hurt	19%	18%	slow to forgive a wrong	13%	5%	distrusts everybody
70%	64%	able to criticize self	43%	24%	easily embarrassed	13%	11%	self-punishing	5%	2%	timid
21%	25%	apologetic	18%	19%	lacks self-confidence	25%	27%	shy	10%	5%	always ashamed of self
59%	64%	can be obedient	10%	6%	easily led	6%	5%	passive and unaggressive	19%	24%	obeys too willingly
32%	30%	usually gives in	32%	27%	modest	6%	6%	meek	8%	5%	spineless
64%	65%	grateful	44%	44%	often helped by others	48%	41%	dependent	51%	35%	hardly ever talks back
18%	19%	admires and imitates others	59%	59%	very respectful to authority	8%	5%	wants to be led	3%	3%	clinging vine
65%	59%	appreciative	68%	60%	accepts advice readily	29%	32%	lets others make decisions	10%	10%	likes to be taken care of
56%	65%	very anxious to be approved of	53%	49%	trusting and eager to please	19%	16%	easily fooled	8%	6%	will believe anyone
79%	83%	cooperative	37%	32%	always pleasant and agreeable	22%	27%	too easily influenced by friends	21%	16%	wants everyone's love
76%	71%	eager to get along with others	70%	65%	wants everyone to like him	11%	14%	will confide in anyone	10%	8%	agrees with everyone
89%	83%	friendly	73%	73%	sociable and neighborly	29%	22%	fond of everyone	44%	37%	friendly all the time
51%	43%	affectionate and understanding	27%	40%	warm	6%	10%	likes everybody	41%	31%	loves everyone
73%	67%	considerate	49%	37%	kind and reassuring	27%	24%	forgives anything	32%	32%	too lenient with others
44%	46%	encourages others	40%	40%	tender and soft-hearted	6%	14%	oversympathetic	33%	33%	tries to comfort everyone
68%	75%	helpful	24%	35%	enjoys taking care of others	13%	19%	generous to a fault	22%	29%	too willing to give to others
41%	44%	big-hearted and unselfish	27%	38%	gives freely of self	6%	18%	overprotective of others	14%	18%	spoils people with kindness

TABLE 24 GRAPHIC ILLUSTRATION

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Pre Training Results
Males Actual Rating Sample n=63 (Self Concept Expressed Value)
Items Checked By Forty Percent Or More Of The Trainee Sample

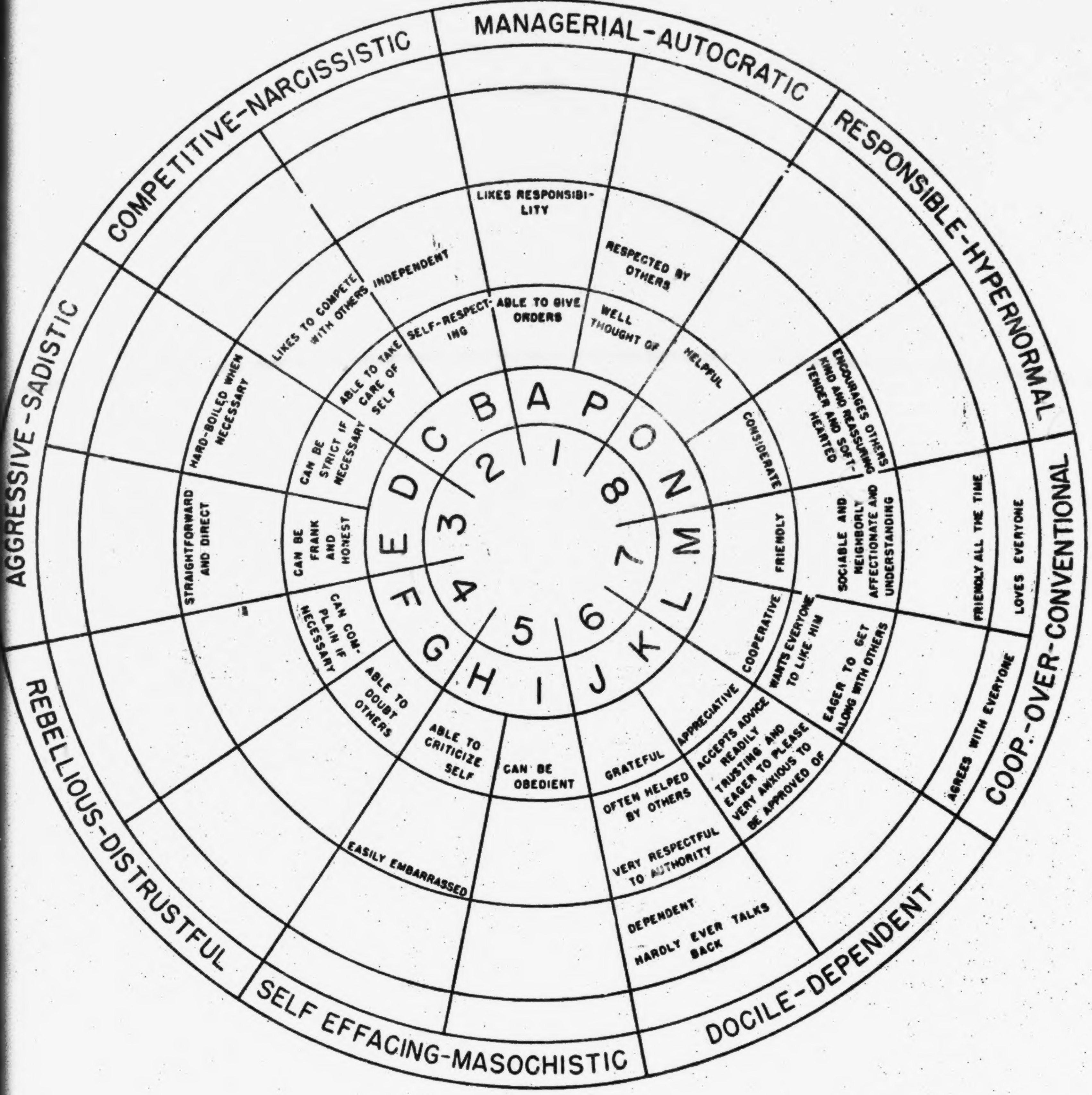


TABLE 24 GRAPHIC ILLUSTRATION

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Experimental Group Post Training Results
Males Actual Rating Sample n=63 (Self Concept Expressed Value)
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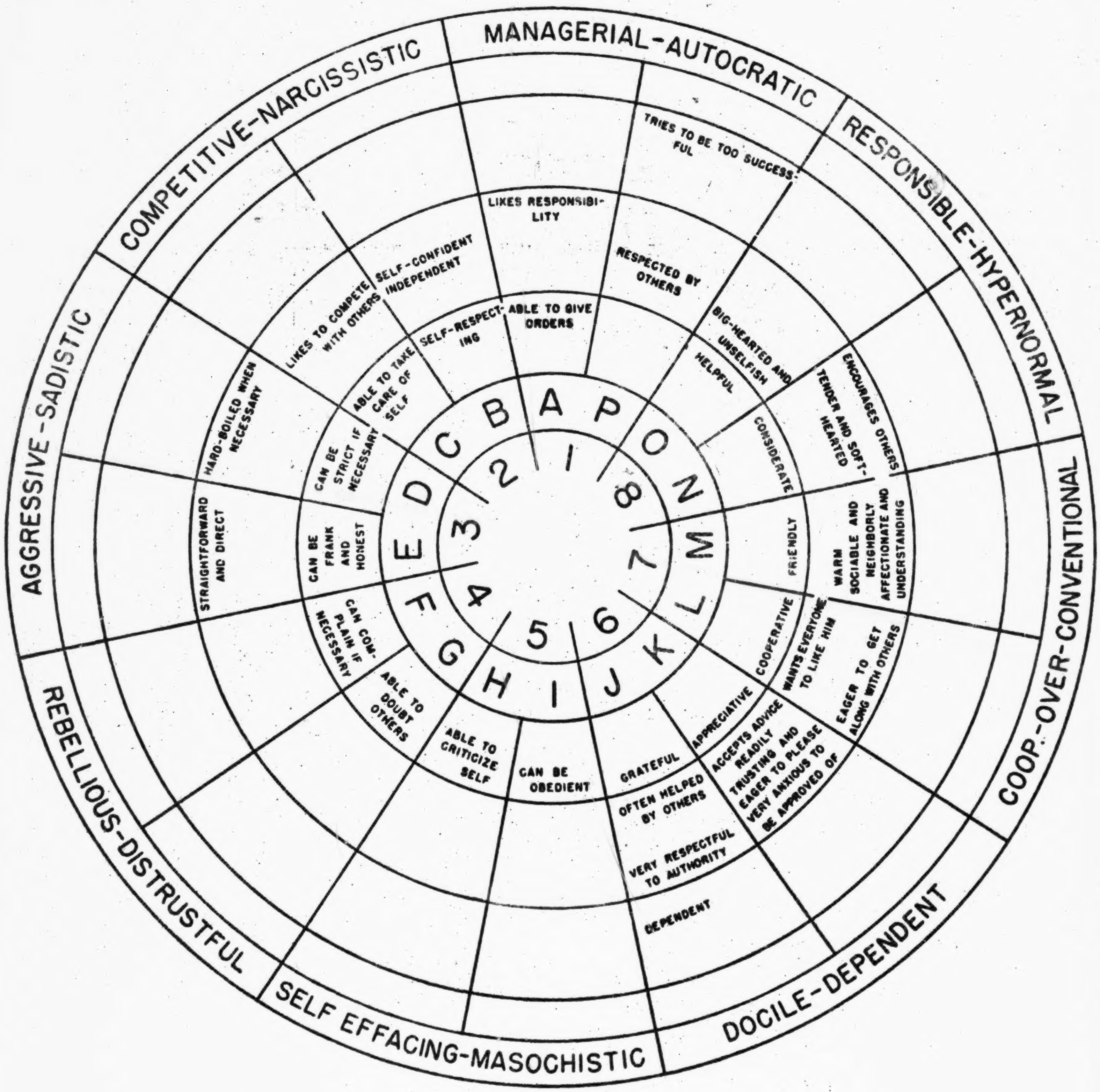

The Interpersonal Checklist Item Analysis

Experimental Group Males Ideal Rating Sample n=63
(Self Concept Idealized Value)

Pre	Post		Pre	Post		Pre	Post		Pre	Post	
68%	67%	well thought of	49%	37%	often admired	22%	16%	always giving advice	27%	32%	tries to be too successful
68%	56%	makes a good impression	75%	62%	respected by others	19%	8%	acts important	16%	6%	expects everyone to admire him
73%	64%	able to give orders	64%	71%	good leader	3%	2%	bossy	25%	22%	manages others
32%	29%	forceful	64%	49%	likes responsibility	18%	11%	dominating	6%	2%	dictatorial
68%	57%	self-respecting	68%	49%	self-confident	10%	2%	boastful	6%	2%	somewhat snobbish
70%	57%	independent	52%	59%	self-reliant and assertive	54%	64%	proud and self-satisfied	10%	5%	egotistical and conceited
87%	70%	able to take care of self	49%	44%	businesslike	8%	5%	thinks only of himself	2%	0%	selfish
16%	18%	can be indifferent to others	57%	53%	likes to compete with others	18%	18%	shrewd and calculating	13%	2%	cold and unfeeling
64%	52%	can be strict if necessary	60%	57%	hard-boiled when necessary	18%	8%	impatient with others' mistakes	10%	3%	sarcastic
64%	57%	firm but just	52%	52%	stern but fair	27%	19%	self-seeking	8%	2%	cruel and unkind
76%	67%	can be frank and honest	8%	3%	irritable	25%	21%	outspoken	14%	3%	frequently angry
6%	10%	critical of others	71%	56%	straightforward and direct	13%	3%	often unfriendly	11%	5%	hard-hearted
62%	57%	can complain if necessary	21%	11%	resents being bossed	10%	3%	bitter	8%	3%	resentful
11%	2%	often gloomy	16%	16%	skeptical	10%	0%	complaining	8%	0%	rebels against everything
48%	46%	able to doubt others	21%	16%	hard to impress	16%	11%	jealous	21%	14%	stubborn
19%	10%	frequently disappointed	13%	6%	touchy and easily hurt	19%	10%	slow to forgive a wrong	13%	2%	distrusts everybody
67%	56%	able to criticize self	21%	2%	easily embarrassed	22%	10%	self-punishing	10%	2%	timid
29%	25%	apologetic	10%	6%	lacks self-confidence	6%	5%	shy	14%	2%	always ashamed of self
60%	43%	can be obedient	6%	3%	easily led	11%	6%	passive and unaggressive	14%	11%	obeys too willingly
22%	3%	usually gives in	30%	35%	modest	10%	10%	meek	10%	2%	spineless
57%	56%	grateful	25%	29%	often helped by others	52%	40%	dependent	48%	32%	hardly ever talks back
18%	10%	admires and imitates others	68%	67%	very respectful to authority	8%	3%	wants to be led	6%	3%	clinging vine
62%	68%	appreciative	59%	51%	accepts advice readily	21%	16%	lets others make decisions	13%	10%	likes to be taken care of
56%	51%	very anxious to be approved of	54%	56%	trusting and eager to please	14%	3%	easily fooled	18%	8%	will believe anyone
73%	73%	cooperative	64%	65%	always pleasant and agreeable	14%	5%	too easily influenced by friends	30%	27%	wants everyone's love
73%	64%	eager to get along with others	68%	60%	wants everyone to like him	16%	10%	will confide in anyone	22%	21%	agrees with everyone
71%	73%	friendly	70%	71%	sociable and neighborly	43%	49%	fond of everyone	67%	67%	friendly all the time
62%	57%	affectionate and understanding	41%	41%	warm	27%	22%	likes everybody	54%	46%	loves everyone
73%	65%	considerate	62%	60%	kind and reassuring	32%	38%	forgives anything	21%	14%	too lenient with others
46%	50%	encourages others	40%	38%	tender and soft-hearted	11%	14%	oversympathetic	38%	41%	tries to comfort everyone
83%	79%	helpful	33%	41%	enjoys taking care of others	19%	24%	generous to a fault	27%	21%	too willing to give to others
46%	49%	big-hearted and unselfish	48%	38%	gives freely of self	13%	8%	overprotective of others	13%	8%	spoils people with kindness

TABLE 25 GRAPHIC ILLUSTRATION

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Pre Training Results
Males Ideal Rating Sample n=63 (Self Concept Idealized Value)
Items Checked By Forty Percent Or More Of The Trainee Sample

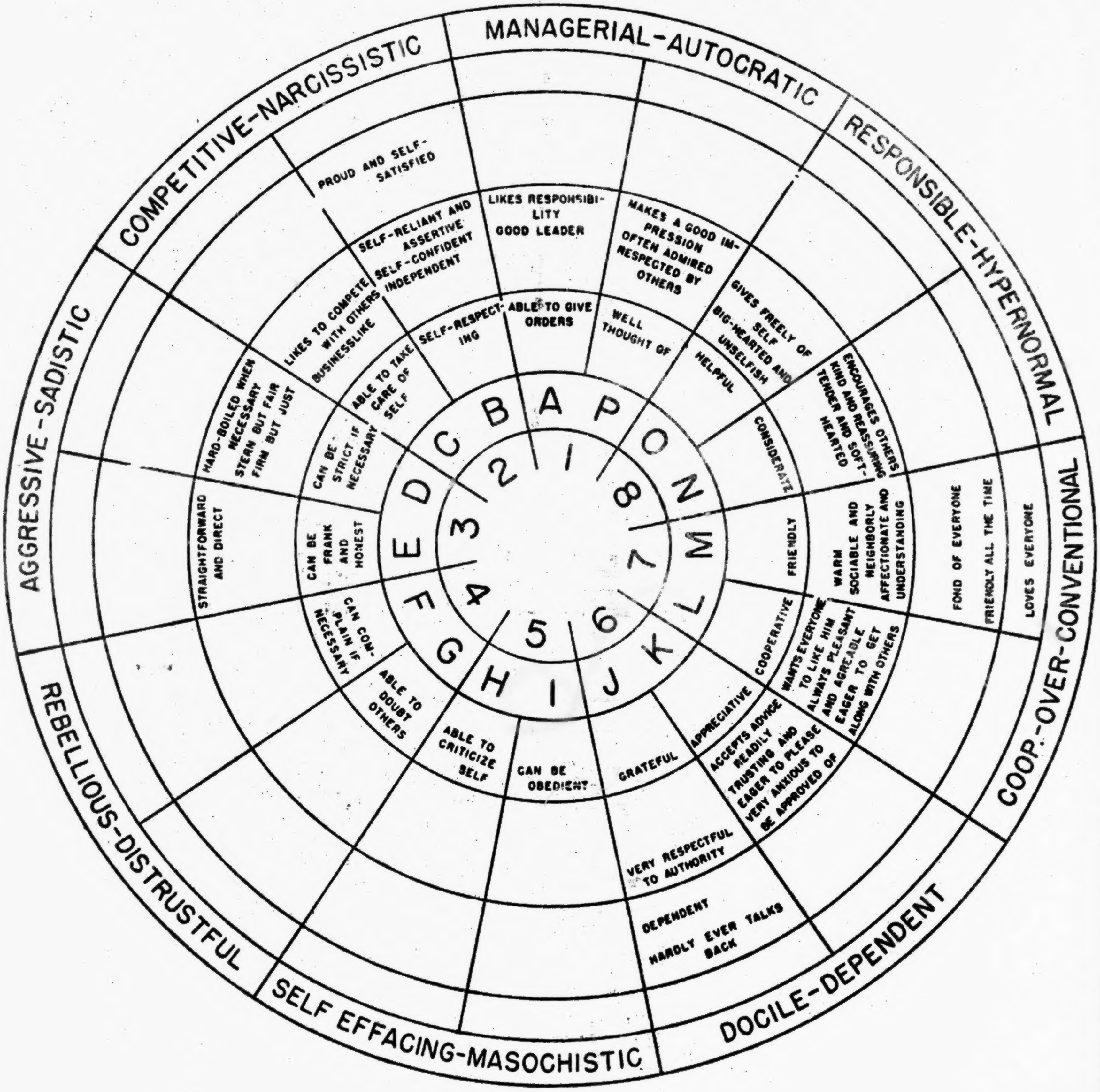
MANAGERIAL-AUTOCRATIC
RESPONSIBLE-HYPERNORMAL
COOP.-OVER-CONVENTIONAL
DOCILE-DEPENDENT
SELF EFFACING-MASOCHISTIC
REBELLIOUS-DISTRUSTFUL
AGGRESSIVE-SADISTIC
COMPETITIVE-NARCISSISTIC
PROUD AND SELF-SATISFIED
SELF-RELIANT AND ASSERTIVE SELF-CONFIDENT INDEPENDENT
LIKES RESPONSIBILITY GOOD LEADER
MAKES A GOOD IMPRESSION OFTEN ADMIRED RESPECTED BY OTHERS
GIVES FREELY OF SELF BIG-HEARTED AND UNSELFISH
ENCOURAGES OTHERS KIND AND REASSURING TENDER AND SOFT-HEARTED
FOND OF EVERYONE
FRIENDLY ALL THE TIME
LOVES EVERYONE
WARM SOCIABLE AND NEIGHBORLY AFFECTIONATE AND UNDERSTANDING
WANTS EVERYONE TO LIKE HIM ALWAYS PLEASANT AND AGREEABLE EAGER TO GET ALONG WITH OTHERS
ACCEPTS ADVICE READILY TRUSTING AND EAGER TO PLEASE VERY ANXIOUS TO BE APPROVED OF
VERY RESPECTFUL TO AUTHORITY
DEPENDENT
HARDLY EVER TALKS BACK
LIKES TO COMPETE WITH OTHERS BUSINESSLIKE
HARD-BOILED WHEN NECESSARY STERN BUT FAIR FIRM BUT JUST
STRAIGHTFORWARD AND DIRECT
ABLE TO GIVE ORDERS
SELF-RESPECTING
WELL THOUGHT OF
HELPFUL
CONSIDERATE
FRIENDLY
COOPERATIVE
APPRECIATIVE
GRATEFUL
CAN BE OBEDIENT
ABLE TO CRITICIZE SELF
ABLE TO DOUBT OTHERS
CAN COMPLAIN IF NECESSARY
CAN BE FRANK AND HONEST
CAN BE STRICT IF NECESSARY
ABLE TO TAKE CARE OF SELF
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TABLE 25 GRAPHIC ILLUSTRATION

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Post Training Results
Males Ideal Rating Sample n=63 (Self Concept Idealized Value)
Items Checked By Forty Percent Or More Of The Trainee Sample

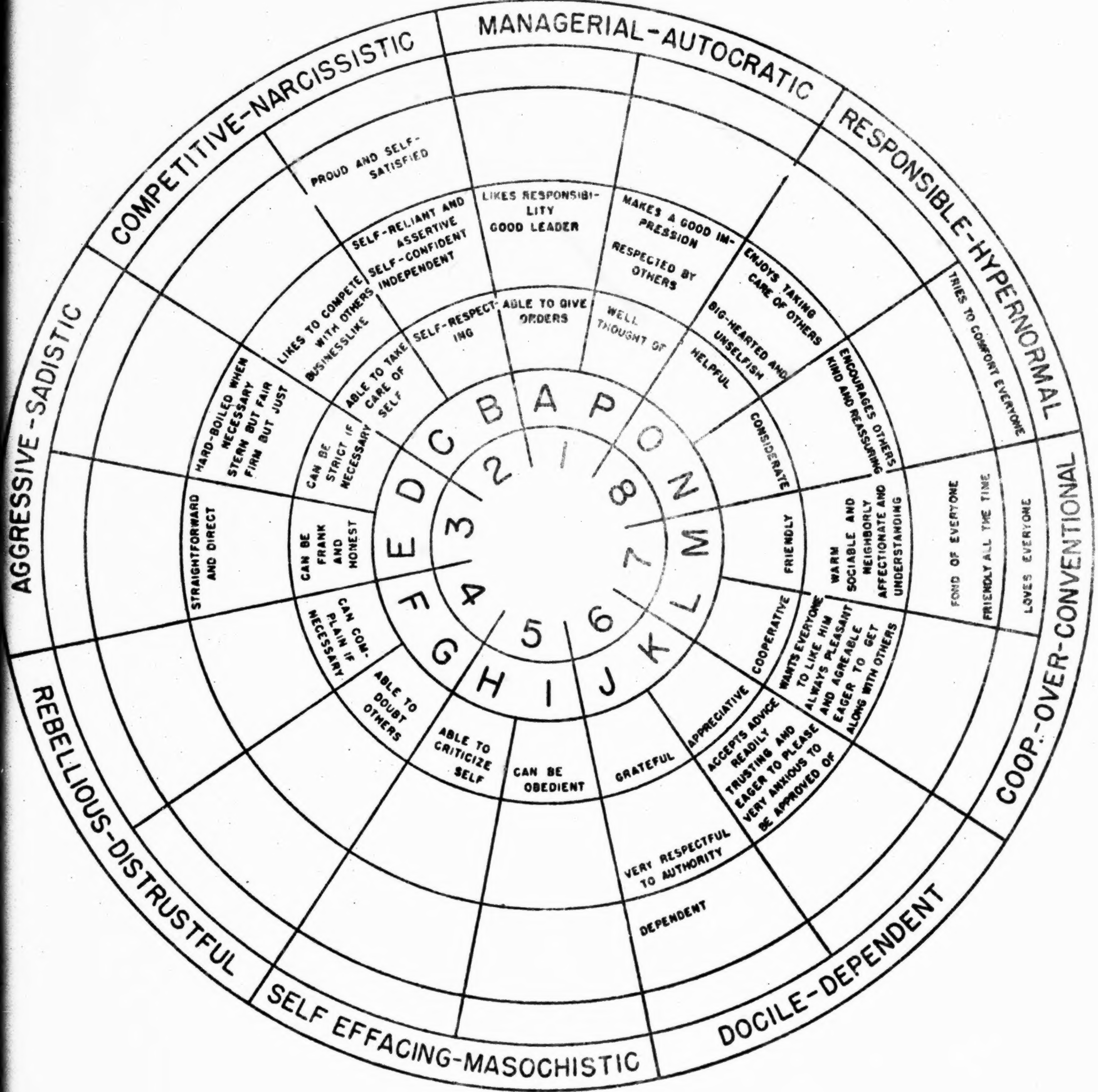


TABLE 26

The Interpersonal Checklist Item Analysis

Experimental Group Females Actual Rating Sample n=52
(Self Concept Expressed Value)

Pre	Post		Pre	Post		Pre	Post		Pre	Post	
39%	40%	well thought of	19%	25%	often admired	17%	6%	always giving advice	37%	37%	tries to be too successful
39%	42%	makes a good impression	54%	56%	respected by others	12%	14%	acts important	4%	4%	expects everyone to admire him
64%	65%	able to give orders	17%	25%	good leader	8%	8%	bossy	14%	6%	manages others
10%	6%	forceful	64%	65%	likes responsibility	6%	6%	dominating	2%	2%	dictatorial
71%	71%	self-respecting	35%	40%	self-confident	2%	2%	boastful	10%	8%	somewhat snobbish
60%	56%	independent	50%	50%	self-reliant and assertive	42%	40%	proud and self-satisfied	2%	0%	egotistical and conceited
83%	90%	able to take care of self	29%	31%	businesslike	4%	2%	thinks only of himself	2%	4%	selfish
31%	25%	can be indifferent to others	42%	39%	likes to compete with others	8%	2%	shrewd and calculating	2%	2%	cold and unfeeling
67%	71%	can be strict if necessary	56%	58%	hard-boiled when necessary	27%	14%	impatient with others' mistakes	10%	15%	sarcastic
29%	46%	firm but just	25%	37%	stern but fair	14%	10%	self-seeking	2%	0%	cruel and unkind
73%	89%	can be frank and honest	15%	4%	irritable	21%	14%	outspoken	14%	21%	frequently angry
14%	6%	critical of others	52%	44%	straightforward and direct	6%	6%	often unfriendly	8%	3%	hard-hearted
71%	83%	can complain if necessary	44%	29%	resents being bossed	8%	6%	bitter	12%	0%	resentful
15%	25%	often gloomy	23%	14%	skeptical	6%	6%	complaining	0%	0%	rebels against everything
54%	64%	able to doubt others	21%	21%	hard to impress	31%	25%	jealous	39%	42%	stubborn
48%	25%	frequently disappointed	35%	40%	touchy and easily hurt	27%	25%	slow to forgive a wrong	4%	2%	distrusts everybody
65%	73%	able to criticize self	56%	52%	easily embarrassed	15%	12%	self-punishing	12%	8%	timid
31%	27%	apologetic	29%	21%	lacks self-confidence	27%	33%	shy	6%	17%	always ashamed of self
67%	67%	can be obedient	6%	10%	easily led	10%	10%	passive and unaggressive	10%	12%	obeys too willingly
23%	31%	usually gives in	39%	44%	modest	12%	14%	meek	2%	6%	spineless
83%	87%	grateful	46%	39%	often helped by others	65%	62%	dependent	39%	40%	hardly ever talks back
33%	17%	admires and imitates others	75%	75%	very respectful to authority	17%	8%	wants to be led	0%	2%	clinging vine
67%	75%	appreciative	58%	54%	accepts advice readily	23%	23%	lets others make decisions	25%	19%	likes to be taken care of
65%	69%	very anxious to be approved of	52%	58%	trusting and eager to please	21%	23%	easily fooled	10%	10%	will believe anyone
85%	83%	cooperative	40%	31%	always pleasant and agreeable	21%	15%	too easily influenced by friends	29%	27%	wants everyone's love
73%	79%	eager to get along with others	69%	73%	wants everyone to like him	10%	8%	will confide in anyone	8%	12%	agrees with everyone
89%	81%	friendly	73%	81%	sociable and neighborly	35%	25%	fond of everyone	48%	37%	friendly all the time
65%	79%	affectionate and understanding	54%	58%	warm	23%	19%	likes everybody	48%	48%	loves everyone
76%	71%	considerate	60%	60%	kind and reassuring	19%	25%	forgives anything	29%	44%	too lenient with others
60%	60%	encourages others	62%	64%	tender and soft-hearted	14%	23%	oversympathetic	39%	42%	tries to comfort everyone
83%	79%	helpful	62%	65%	enjoys taking care of others	31%	19%	generous to a fault	35%	21%	too willing to give to others
44%	39%	big-hearted and unselfish	27%	37%	gives freely of self	17%	10%	overprotective of others	17%	15%	spoils people with kindness

TABLE 26 GRAPHIC ILLUSTRATION

Austin and Sommerfeld:	Vocational Education For Disadvantaged Youth Project

Experimental Group Pre Training Results
Females Actual Rating Sample n=52 (Self Concept Expressed Value)
Items Checked By Forty Percent Or More Of The Trainee Sample

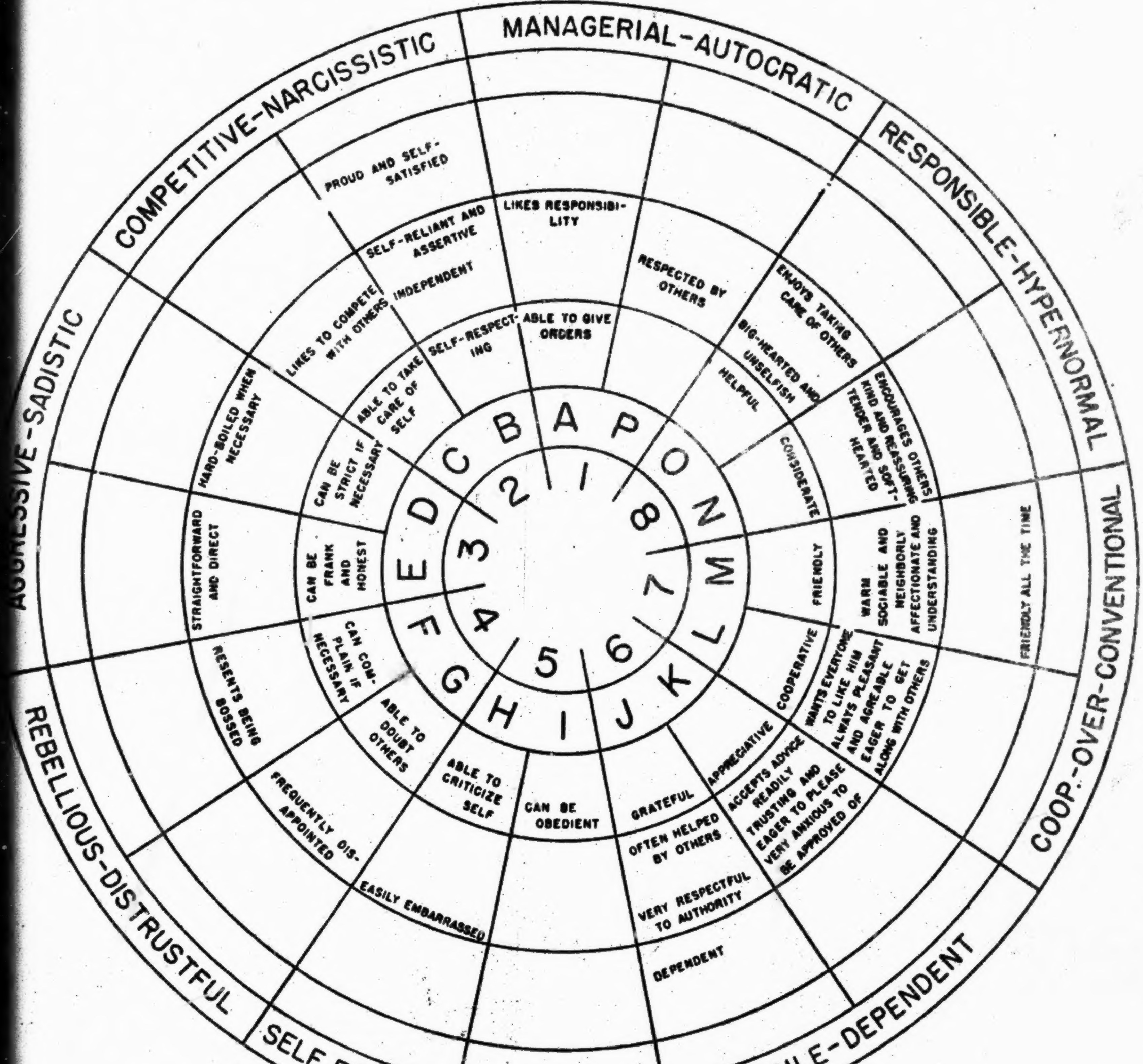
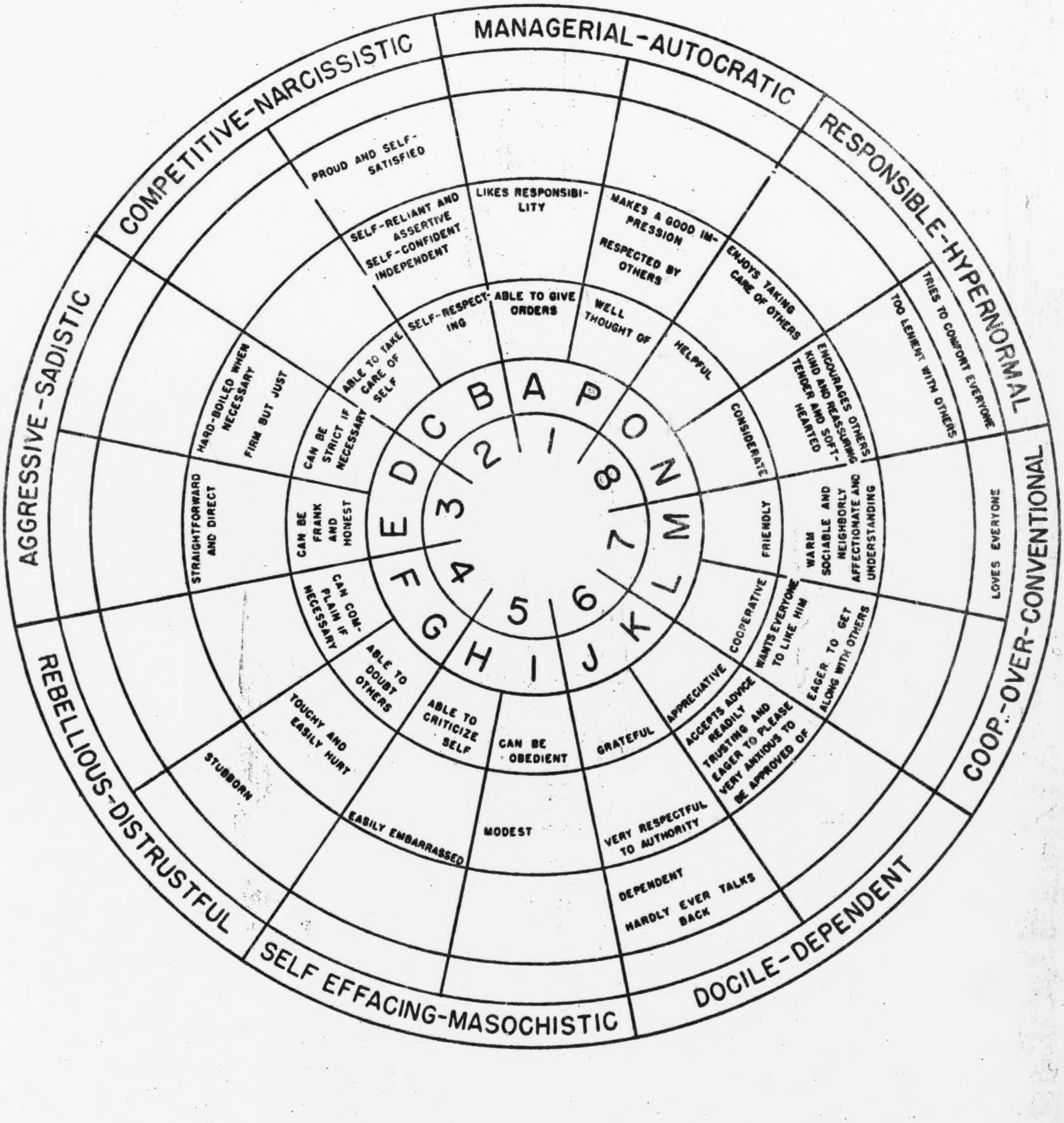


TABLE 26 GRAPHIC ILLUSTRATION

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Post Training Results
Females Actual Rating Sample n=52 (Self Concept Expressed Value)
Items Checked By Forty Percent Or More Of The Trainee Sample



The Interpersonal Checklist Item Analysis

Experimental Group Females Ideal Rating Sample n=52
(Self Concept Idealized Value)

Pre	Post		Pre	Post		Pre	Post		Pre	Post	
71%	71%	well thought of	33%	46%	often admired	14%	10%	always giving advice	35%	37%	tries to be too successful
60%	85%	makes a good impression	79%	69%	respected by others	19%	29%	acts important	10%	6%	expects everyone to admire him
58%	64%	able to give orders	54%	77%	good leader	2%	6%	bossy	14%	17%	manages others
17%	21%	forceful	69%	67%	likes responsibility	8%	6%	dominating	0%	4%	dictatorial
75%	75%	self-respecting	58%	60%	self-confident	2%	0%	boastful	2%	0%	somewhat snobbish
67%	60%	independent	50%	44%	self-reliant and assertive	52%	54%	proud and self-satisfied	2%	0%	egotistical and conceited
77%	67%	able to take care of self	33%	42%	businesslike	2%	2%	thinks only of himself	2%	0%	selfish
15%	19%	can be indifferent to others	44%	39%	likes to compete with others	6%	10%	shrewd and calculating	4%	3%	cold and unfeeling
67%	54%	can be strict if necessary	56%	46%	hard-boiled when necessary	8%	15%	impatient with others' mistakes	6%	2%	sarcastic
48%	58%	firm but just	42%	40%	stern but fair	10%	15%	self-seeking	0%	0%	cruel and unkind
79%	69%	can be frank and honest	4%	0%	irritable	14%	13%	outspoken	8%	12%	frequently angry
6%	10%	critical of others	54%	65%	straightforward and direct	6%	2%	often unfriendly	6%	0%	hard-hearted
69%	67%	can complain if necessary	31%	12%	resents being bossed	0%	6%	bitter	6%	0%	resentful
8%	4%	often gloomy	19%	12%	skeptical	6%	0%	complaining	4%	2%	rebels against everything
35%	39%	able to doubt others	12%	17%	hard to impress	10%	8%	jealous	25%	17%	stubborn
19%	6%	frequently disappointed	17%	2%	touchy and easily hurt	17%	10%	slow to forgive a wrong	2%	4%	distrusts everybody
64%	65%	able to criticize self	27%	14%	easily embarrassed	21%	4%	self-punishing	4%	2%	timid
31%	29%	apologetic	12%	4%	lacks self-confidence	20%	6%	shy	12%	0%	always ashamed of self
71%	40%	can be obedient	6%	0%	easily led	6%	4%	passive and unaggressive	17%	6%	obeys too willingly
23%	2%	usually gives in	42%	37%	modest	10%	8%	meek	2%	2%	spineless
79%	65%	grateful	33%	17%	often helped by others	58%	48%	dependent	39%	27%	hardly ever talks back
25%	12%	admires and imitates others	65%	64%	very respectful to authority	10%	8%	wants to be led	6%	2%	clinging vine
73%	56%	appreciative	71%	48%	accepts advice readily	17%	10%	lets others make decisions	21%	25%	likes to be taken care of
52%	52%	very anxious to be approved of	60%	64%	trusting and eager to please	10%	6%	easily fooled	15%	6%	will believe anyone
77%	69%	cooperative	60%	64%	always pleasant and agreeable	17%	4%	too easily influenced by friends	29%	23%	wants everyone's love
79%	67%	eager to get along with others	71%	48%	wants everyone to like him	17%	6%	will confide in anyone	8%	15%	agrees with everyone
85%	73%	friendly	87%	79%	sociable and neighborly	42%	52%	fond of everyone	67%	71%	friendly all the time
75%	64%	affectionate and understanding	58%	58%	warm	23%	29%	likes everybody	56%	64%	loves everyone
83%	60%	considerate	69%	65%	kind and reassuring	31%	33%	forgives anything	31%	15%	too lenient with others
65%	52%	encourages others	52%	46%	tender and soft-hearted	12%	2%	oversympathetic	48%	56%	tries to comfort everyone
87%	73%	helpful	65%	52%	enjoys taking care of others	33%	17%	generous to a fault	27%	21%	too willing to give to others
60%	50%	big-hearted and unselfish	40%	35%	gives freely of self	8%	4%	overprotective of others	17%	17%	spoils people with kindness

TABLE 27 GRAPHIC ILLUSTRATION

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Pre Training Results
Females Ideal Rating Sample n=52 (Self Concept Idealized Value)
Items Checked By Forty Percent Or More Of The Trainee Sample

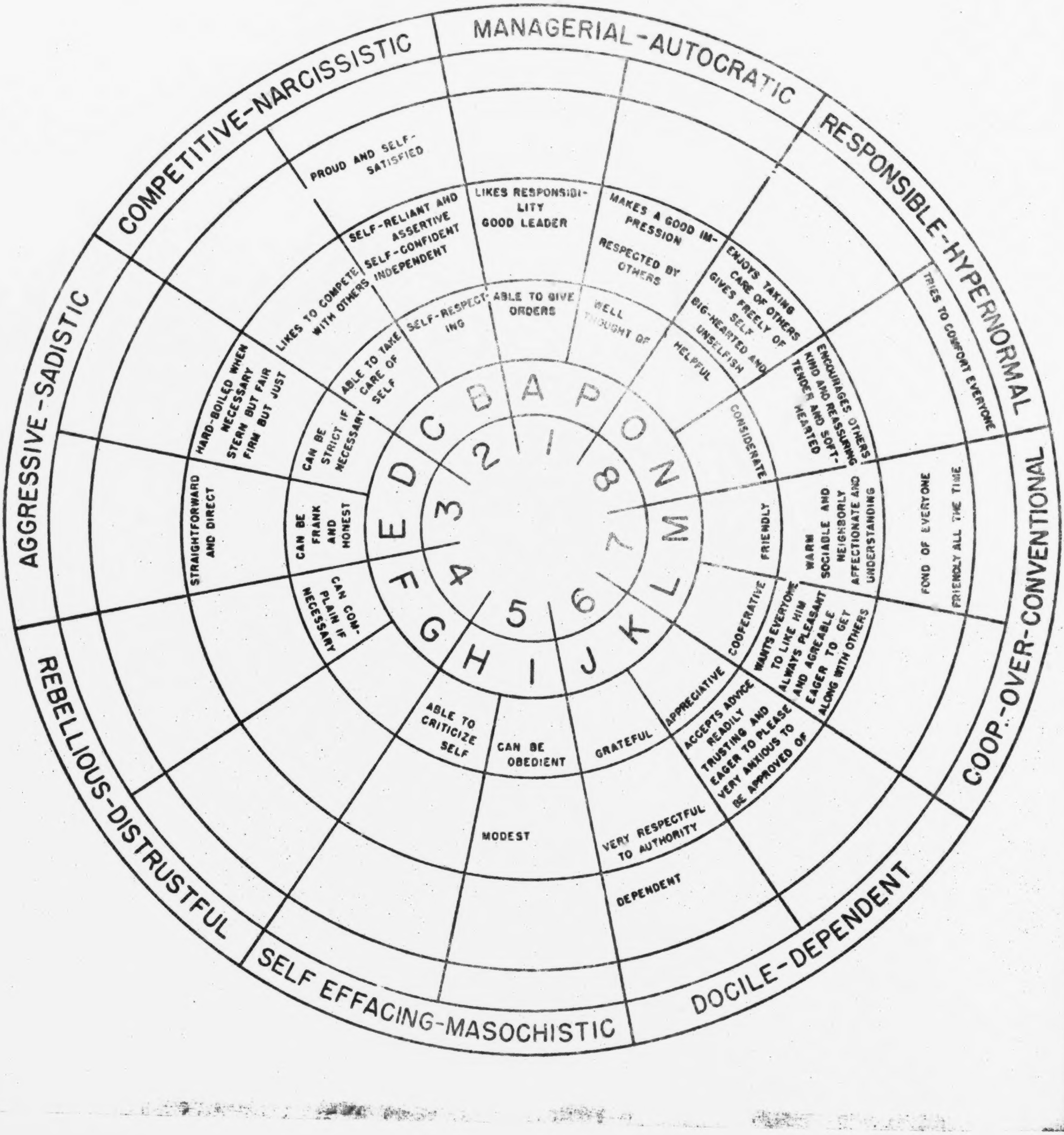
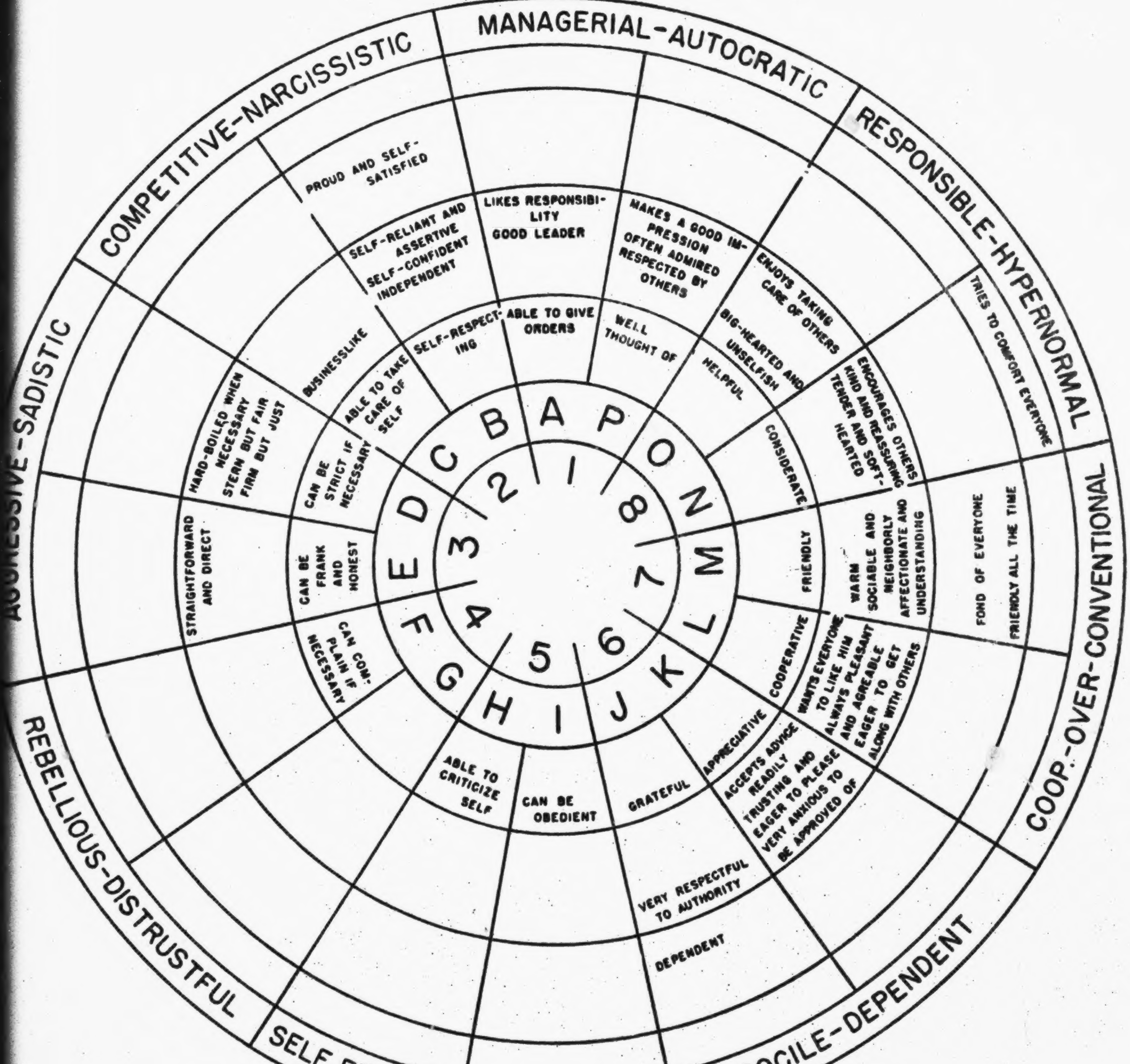


TABLE 27 GRAPHIC ILLUSTRATION

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Post Training Results
Females Ideal Rating Sample n=52 (Self Concept Idealized Value)
Items Checked By Forty Percent Or More Of The Trainee Sample



the Interpersonal Checklist for a brief discussion of this topic.) We also found that females tend to be more verbal than males on actual self descriptions. On ideal self description, both groups are comparable. In terms of intensity, which is shown by four concentric bands on the graphic illustrations of the Interpersonal Checklist ranging from level one which is the inner circle to level four which is the outer band, females are more intense in their actual self description than males. However, males are generally more intense on ideal self description than females. Both groups on a pre-post basis became less verbal about their ideal self description on the post rating. It is thought that the greater the discrepancy between the actual and ideal description, the greater the self dissatisfaction. While the pre-post actual descriptions remained nearly the same in number of items checked, the post ideal descriptions decreased to the point of being lower than the actual post description. We interpret this finding as being an indication of greater self acceptance and approval on the part of the trainees.

More specifically, we see ascending value expressed in the actual self ratings. Self ascendancy or descendancy is probably related to social acquiescence on the Interpersonal Checklist. For a disadvantaged population any increase in social acquiescence can be viewed as being positive. LaForge (1963) discussed this phenomenon and points out that some unbalance probably does exist on the love-hate axis of the Interpersonal Checklist. In a group where many persons are experiencing learning success and recognition, we would expect that improved self concept would effect group results along conventional lines. We can only guess that self descendancy on a pre-post test basis would be indicated by an increase in expressed idealized self description in relation to actual self description which would remain the same or possibly show a decrease in items selected. Disaffiliation might also be expected to occur along conventional lines. The following statements help to capsule our findings with regard to males and females on a pre-post, actual-ideal value basis.

Males Stated Collectively That:

1. We are more:	than we are:
Cooperative	Competitive
Docile	Rebellious
Responsible	Self Effacing
Aggressive	Managerial
2. We would like to become more:	and less:
Cooperative	Docile
Managerial	Self Effacing
Responsible	Rebellious
Competitive	
Aggressive	
3. We have become more:	so we don't need, as much as we used to, to become:
Responsivle	Responsible
Aggressive	Aggressive
Competitive	Competitive
Managerial	Managerial
4. We have become less:	so in the future we want to remain less:
Rebellious	Rebellious
Self Effacing	Self Effacing
Docile	Docile
Cooperative	Cooperative

5. Now we are more:
   Cooperative
   Responsible
   Docile
   Aggressive

than we are:
   Competitive
   Rebellious
   Managerial
   Self Effacing

Females Stated Collectively That:

1. We are more:
   Cooperative
   Docile
   Responsible
   Competitive

than we are:
   Rebellious
   Aggressive
   Self Effacing
   Managerial

2. We would like to become more:

   Cooperative
   Responsible
   Managerial
   Competitive

and less:

   Aggressive
   Self Effacing
   Docile
   Rebellious

3. We have become more:
   Self Effacing
   Aggressive
   Managerial

so we don't need, as much as we used to, to become:
   Self Effacing
   Aggressive

but we still want to become more:
   Managerial

4. We have become less:
   Cooperative
   Responsible
   Docile
   Competitive
   Rebellious

so in the future we want to remain less:
   Cooperative
   Responsible
   Docile
   Competitive
   Rebellious

5. Now we are more:
   Cooperative
   Responsible
   Docile
   Competitive

than we are:
   Aggressive
   Self Effacing
   Rebellious
   Managerial

To further explore the meaning of expressed value we compared by operational behavior quadrants the Interpersonal Checklist rating of the above cited males and females in combination. The biggest problem with this procedure was the small n's which remained a problem even after combining the two groups. (See Appendix C, Tables V thru CC.) As reported earlier in this section, both the experimental and the control groups became more organized and reality orientated on a pre-post test basis. Since we do not understand clearly the relationship between value and behavior as a personality process, we felt that an opportunity to make this comparison would be a relevant and beneficial procedure. Because we will be discussing two sets of data for four different groups the following illustration is helpful. This illustration show the changes that occurred on a pre-post basis for a special sample of trainees with Interpersonal Checklist ratings drawn from the experimental group shown in Tables 20 and 21.

Operational Behavior Track - Quadrant Changes Pre To Post

Pre Actual Quadrants:

Total n=115

	A B C	D E F
Normal Aggressive Anxious	Quadrant 1 n=27	Quadrant 2 n=55
Affective Skeptical Unorganized	Quadrant 3 n=16	Quadrant 4 n=17

Post Quadrants

Pre Quadrant 1 n=27

Quadrant 1 n=9	Quadrant 2 n=12
Quadrant 3 n=4	Quadrant 4 n=2

Pre Quadrant 2 n=55

Quadrant 1 n=7	Quadrant 2 n=43
Quadrant 3 n=2	Quadrant 4 n=2

Post Quadrants

Pre Quadrant 3 n=16

Quadrant 1 n=3	Quadrant 2 n=6
Quadrant 3 n=6	Quadrant 4 n=1

Pre Quadrant 4 n=17

Quadrant 1 n=3	Quadrant 2 n=10
Quadrant 3 n=2	Quadrant 4 n=2

Post Actual Quadrants:

Total n=115

	A B C	D E F
Normal Aggressive Anxious	Quadrant 1 n=22	Quadrant 2 n=71
Affective Skeptical Unorganized	Quadrant 3 n=14	Quadrant 4 n=8

Change vs Non Change Results

Change n=55 Non Change n=60

In dealing with groups that have changed on a pre-post basis in that they don't always represent the same persons, it is necessary to report our findings in somewhat of a different manner than we used for the male and female comparison. We believe that value expressions can be overstated or understated and it is possible to analyze these positions by the following rationale.

Valuation: The four highest Interpersonal Checklist octants on the expressed value actual rating.

Overvaluation: Occurs when the expressed ideal value is greater than the expressed actual value.

Undervaluation: Occurs when the expressed ideal value is less than the expressed actual value.

Sustained Valuation: Is when the expressed ideal value is close to the expressed actual value.

As follows are the general findings for the experimental group special sample when the above rationale is applied to Tables 20 and 21 and V thru CC in Appendix C.

Pre Actual Interpersonal Checklist Rating Group Summary

Quadrant Group 1

Valuation	Overvaluation
Cooperative	Cooperative
Docile	Responsible
Responsible	Managerial
Competitive	Competitive

Sustained Valuation	Undervaluation
Docile	Self Effacing
Aggressive	Rebellious

Quadrant Group 2

Valuation	Overvaluation
Docile	Cooperative
Responsible	Managerial
Cooperative	Competitive
Rebellious	

Sustained Valuation	Undervaluation
Responsible	Rebellious
Aggressive	Self Effacing
	Docile

Quadrant Group 3

Valuation	Overvaluation
Cooperative	Managerial
Docile	Competitive
Responsible	
Aggressive	

Sustained Valuation	Undervaluation
Cooperative	Rebellious
Aggressive	Responsible
Self Effacing	Docile

Quadrant Group 4

Valuation	Overvaluation
Cooperative	Cooperative
Docile	Responsible
Responsible	Competitive
Competitive	Managerial
	Aggressive
	Self Effacing

Sustained Valuation	Undervaluation
Docile	Rebellious

Post Actual Interpersonal Checklist Rating Group Summary

Quadrant Group 1

Valuation
- Cooperative
- Docile
- Responsible
- Competitive

Overvaluation
- Cooperative
- Managerial

Sustained Valuation
- Aggressive
- Competitive

Undervaluation
- Rebellious
- Self Effacing
- Docile
- Responsible

Quadrant Group 2

Valuation
- Cooperative
- Responsible
- Docile
- Aggressive

Overvaluation
- Cooperative
- Managerial
- Competitive

Sustained Valuation
- Responsible
- Aggresive

Undervaluation
- Self Effacing
- Rebellious
- Docile

Quadrant Group 3

Valuation
- Cooperative
- Docile
- Competitive
- Aggressive

Overvaluation
- Cooperative
- Responsible
- Managerial

Sustained Valuation
- Competitive

Undervaluation
- Rebellious
- Self Effacing
- Aggressive
- Docile

Quadrant Group 4

Valuation
- Responsible
- Cooperative
- Docile
- Competitive

Overvaluation
- Managerial

Sustained Valuation

Undervaluation
- Rebellious
- Self Effacing
- Aggressive
- Competitive
- Docile
- Responsible
- Cooperative

In addition to the above findings some other interesting results are evident and related to the quadrant groups. Just as with males and females who have both common and unique values, the same finding is also true for quadrant groups. For example, quadrant comparisons reveal the following characteristics.

Unique Quadrant Features

Quadrant Group 1	Quadrant Group 2
High Interpersonal Checklist ideal-actual rating discrepancy on pre-post + or - basis (non self accepting)	Smallest Interpersonal Checklist ideal-actual rating discrepancy on pre-post + or - basis (self accepting)
Consistently competitive	Consistently aggressive-rebellious
Controlling of aggressive and competitive needs	Controlling of aggressive and responsible needs
Low verbalness on self description pre-post basis (NIC)	High verbalness on self description pre-post basis (NIC)
Very changeable on verbalness on ideal description pre-post (NIC)	Consistent verbalness on ideal description pre-post basis (NIC)
Low intensity actual self description pre-post results	High intensity actual self description pre-post results
Variable intensity ideal self description pre-post results	Medium intensity ideal self description pre-post results
Discriminating adjectives: ?	Discriminating adjectives: Forceful, resents being bossed, touchy and easily hurt, stubborn

Quadrant Group 3	Quadrant Group 4
Low Interpersonal Checklist ideal-actual rating discrepancy on pre-post + or - basis (self accepting)	Largest Interpersonal Checklist ideal-actual rating discrepancy on pre-post + or - basis (non self accepting)
Consistently aggressive-competitive	Consistently competitive
Controlling of competitive needs	Controlling of dependent needs
Very changeable on verbalness on self description pre-post basis (NIC)	Very changeable on verbalness on self description pre-post basis (NIC)
Very changeable on verbalness on ideal description pre-post basis (NIC)	Very changeable on verbalness on ideal description pre-post basis (NIC)
Medium intensity actual self description pre-post results	Medium intensity actual self description pre-post results
Low intensity ideal self description pre-post results	Variable intensity ideal self description pre-post results
Discriminating adjectives: jealous, apologetic, modest, usually gives in	Discriminating adjectives: apologetic, often gloomy

NIC = number of items checked

We have also found that disadvantaged youth who can read adequately and are willing to attempt a vocational training program do value certain adjectives highly as a group. When all level one intensity responses, the inner circle of adjectives on the graphic illustrations, and level two intensity responses for octants six, seven, and eight, the second band from the center, which are the most culturally biased, are omitted from consideration, the following adjectives are evident as having high value.

Adjectives With High Value (Ideal And/Or Actual Ratings - Males And Females)

1. Makes a good impression
2. Often admired
3. Respected by others
4. Good leader
5. Likes responsibility
6. Tries to be too successful
7. Independent
8. Self-confident
9. Self-reliant and assertive
10. Businesslike
11. Likes to compete with others
12. Proud and self-satisfied
13. Firm but just
14. Can be frank and honest
15. Hard-boiled when necessary
16. Stern but fair
17. Straightforward and direct
18. Frequently disappointed
19. Apologetic
20. Easily embarrassed
21. Dependent
22. Hardly ever talks back
23. Fond of everyone
24. Friendly all the time
25. Loves everyone
26. Forgives anything
27. Too lenient with others
28. Tries to comfort everyone

Personality-Value Meaning

Other investigators have used descriptive behavioral-value adjectives to study and define personality processes. Cattell (1965), Murray (1936-43), Gough and Heilbrun (1965), and many others have employed this conceptual method with good results. Clusters of adjectives can usually reveal polarity features which invariably have value connotations of too little, too much, just right, wrongness or rightness, losers or winners, or a good person or a bad person. What an individual or society does with this information is crucial from a value standpoint. If logical findings, even though obtained through sophisticated scientific methods, are interpreted by philosophical guidelines that are medieval than reality is thwarted. It matters not whether the topic under consideration is the atomic bomb or personality of disadvantaged youth.

Personality findings can be taken literally as an indication that a course of social action is necessary and will be helpful and valid or they can be viewed as a diagnostic end that is, these are bad people or in a personal tense, "I am hopeless and/or the world (life) is hopeless." Cervantes (1965) lists the psychological tendencies of the dropout in contrast to those of the graduate. Is it surprising that the dropout has all negative social characteristics while the graduate has all positive characteristics? If we stop at this question we diagnostically deadend the dropout. If we ask another series of questions, perhaps, optimism and help can be generated. For example, is the disadvantaged person or dropout really a dropout or is he a "push out", a person rejected by society in an academic milieu (schools)? Can his suffering be alleviated and prevented by adequate and meaningful changes in our schools? Why is it possible for a training center to succeed in helping dropouts in a measurable way while schools fail? If a dropout has occupational capability and potential, how did he acquire the personality of a dropout? Why is it possible that the schools can help a person with equivalent abilities acquire the personality of a graduate while they cannot prevent the opposite? All of these questions require that value judgments and positions be taken which may question the adequacy of schools as a public institution charged with the responsibility to help all children succeed educationally.

Summary

In this section, emphasis has been placed on personality process as a concept that is central to all behavior be it intellectual, emotional, motivational, or in any other manifested form. We have shown how behavioral measurements of abilities can be reinterpreted and presented by a logical method so as to reveal a changing behavioral process. Values and beliefs have been stressed as being vital to self concept formation. Some values are common to most persons, other values being common to only a certain class of persons. Learning situations and settings are vital to personality development in that a structure exists which has standards and ideals. No matter whether the structure is the home, school or church, as an institution, it holds up standards and ideals which an individual can adopt to win approval and self esteem. If the values and ideals of an institution are rejected by an individual either through default or deliberate choice and if no alternative institution with different ideals and values is available then shame and inferiority are very probable outcomes (Leary, 1957). For example, if a student has low ability and hence is the lowest in his class and if his school has a value system where the lowest is labelled a failure he then, by default, has to either accept this role, become a cheater and try to thwart the system, or be a quitter. All the alternatives have assigned values of defeat and inferiority. It would indeed be the rare school that communicated the idea, "that it doesn't matter that you are the lowest in the class for somebody is always lowest in every grouping and, furthermore, what really counts is how much you can learn in relation to the ability you have." Kluckholm and Murray (1949) point out that, "high aspirations can cause unhappiness and discontent while the process of lowering aspirations to realizable levels is functional." This is a key idea for our trainees not only became more organized and responsible as persons but they became more self accepting in that they lowered their ideal self aspirations. Interestingly, their value ideals did not change but only lessened in intensity.

It is difficult to determine in exact ways how the training centers' value structure influenced the trainees other than generally being beneficial. However, the extreme value differences between the center and a typical high school are very evident. No grades were used in the center, only progress reports of an informal and highly personalized nature. A standard training allowance was a reality factor coupled only to attendance and not performance. High and low performers alike were given the same allowance. Money is a real incentive which can provide an immediate reward if the trainee chooses to use it as such. It is very difficult to compare money, even if it is only token, with school grades which have high symbolic and abstract qualities with very limited transferability. The centers' value system also emphasized preparation for a job. Training was not viewed as a competitive excercise but rather as a preparatory process. Since many skill programs were underway simultaneously, it was impossible to compare as to whether persons in a woodshop setting were making greater or lesser progress than other persons in the auto mechanics, welding or clerical areas. Finally, the staff in a collective way viewed their responsibility to the trainees as one of providing help and finding ways to insure trainee success. In this sense the center was a helping agency not a selecting agency and as a result the instructors were not in the role of adversaries for every trainee was viewed as having potential for success.

If our findings can be considered to have meaning and purpose, it is only because of the efforts of the staff at the skill center. These people offered a program with a new learning philosophy that is highly valid for disadvantaged youngsters. The impact of this training changed the personality process of the trainees and provided them with new skills and attitudes.

In the following chapters we will show some of the outcomes and effects that modified personality processes in disadvantaged youngsters can produce.

PART FIVE

ACHIEVEMENT

Achievement is an expression of personality process and is the result of learning effort. Achievement is measurable and verifiable in many instances. This statement is particularly true for the basic academic skills of reading, spelling and arithmetic. These skills in the training population were measured periodically with the Wide Range Achievement Test (Jastak and Bijou, 1946). The control group also was involved in this measurement program on a pre-post basis. A major portion of the results of this testing program have been reported in Tables 3 thru 15 in Part Two, Basic Findings.

Achievement is also an expression of general, as well as specific, accomplishment. Both, this section and the next, Part Six Occupational Status, can be considered as reports of achievement. In this section we have chosen to emphasize the non-economic aspects of achievement in addition to the more familiar educational achievement goals.

Much has been reported in the literature on the topic of achievement. In recent times there has been a growing concern about the problems of underachievement. However, one should be exceedingly cautious about the term underachievement as well as the term overachievement as they both are oversimplifications if used in a circular sense. When I.Q. or M.A. is higher or lower than an achievement grade equivalent or score, this finding constitutes overachievement or underachievement. Thorndike (1963) and Lavin (1965) have discussed the serious implication of overachievement-underachievement as working concepts. Lavin states that, "in short, these terms actually refer to the inaccuracy involved in predicting academic performance from ability measures alone. If this is not recognized, we may fail to look for other significant classes of predictors." Raph, Goldberg and Passow (1966) report on the pervasive but elusive qualities which some other classes of predictors have on bright underachievers. Bloom (1964) indicates achievement is highly relevant to longitudinal considerations and environmental stimulation. Other investigators have reported on the achievement status of disadvantaged groups. Pallone (1965) reported on the achievement of a group of disadvantaged adults who were classified as hard-core unemployed. He found that they had an average third grade equivalency. Grade equivalent gains of 1.0 to 2.0 after twenty and thirty six week periods of training were common. Peterson (1965) reported on a graduating group of unemployed youth (16-21 years of age) in a training camp setting. She found that 47% gained a year or more in reading achievement and 45% gained a year or more in arithmetic achievement. Trainees initially tested who read below the sixth grade level are cited as being 23% of the population under study while 66% of the population tested had a fifth grade or lower arithmetic average. Project PEACE in Cleveland, Ohio, a program for disadvantaged adults who achieve below the fifth grade level, has reported the following reading results*.

* Taken from Education And Training - Passport to Opportunity, Fourth Annual Report of the Department of Health, Education and Welfare to the Congress on Training Activities Under the Manpower Development and Training Act (March, 1966).

Highest Grade Completed	Reading Grade Level December 1965	February 1966	March 1966
12th	4.8	7.8	9.0+
8th	3.6	5.4	6.6

The Washington D.C. MDTA Service Maintainance Project, in the spring of 1963, for adult trainees reported an initial average reading level of 1.4 with a gain of 1.3, during the course of training, producing a final average reading level of 2.7 (Educationally Deficient Adults, 1964). Ginzberg (1966) provides a comprehensive picture of the illiteracy problem during World War II. He and Bray point out that despite "schooling" or attendance in public school for a period of four to seven years that functional illiteracy could still be highly prevalent among military inductees. In special army training programs for illiterates, 80% of those attending were able to pass a reading examination at the fourth grade level with less than 60 days of instruction (Ginzberg and Bray, (1953). Compensatory education is strongly advocated by Bloom, Davis and Hess (1965) for they report that on the average disadvantaged children are three years behind grade norms in reading and arithmetic by the time they reach the eighth grade. Kennedy (1965) in a follow up study of negro children reports that adolescents, 13 thru 19 years of age, typically have mean reading and arithmetic achievement scores ranging from the fourth thru the seventh grade level of equivalency. Low reading and arithmetic scores (below the sixth grade level) are reported as being common among disadvantaged youth by the staff of the Chicago Job Opportunities Through Better Skills Program (1963-64 Final Report). In an unpublished study on the effects of cultural background (as measured by the fathers occupation) on reading achievement of seventh graders, Helms (1963) showed that a significant relationship exists between reading, intelligence and family status. These findings point out that school attendance is one variable, school achievement is another while social competency is still an additional variable. While we should very carefully define educational attainment too often we consider it as being perfectly synonymous with attendance. This type of equation lends support to the fallacy that dropouts are equal to graduates except for an attendance factor. It also erroneously gives support to the contention that if one wants to earn more money in his lifetime he merely has to attend school longer. Stay in school campaigns are admirable in spirit but contrary to fact. Comparisons, however, are worthwhile in many instances no matter whether the groups are different. Perrella and Waldman (1965) in a follow up study of dropouts versus graduates bring to light many interesting findings even though the groups are not comparable. As we will illustrate, the problem of comparable expectations is like mixing colors. For example, if you have a reading program for disadvantaged youth and it produces unexpected results it may be like adding blue to yellow expecting only green to appear yet purple also appears. If this happens, the beginning color of red was also present. Thus, similar treatment can produce unanticipated results. This analogy applies to our basic education program results which are shown in Tables 28, 29, and 30.

In these tables, the lower reading subgroup of trainees was compared to the upper reading subgroup of trainees and reading achievers are contrasted with reading non achievers.

TABLE 28

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison
Reading - Lower Subgroup (X) vs Upper Subgroup (Y)*
n=61 n=59
By Mean Scores

	Lower Subgroup		Difference	Upper Subgroup		Difference	Significance
	Pre	Post		Pre	Post		
WAIS Full I.Q.	84.06	88.93	4.86	101.75	107.14	5.38	n.s.
WAIS Altitude I.Q.	91.54	95.52	3.98	109.96	116.54	6.57	n.s.
WAIS Verbal I.Q.	83.47	87.10	3.62	103.45	106.78	3.33	n.s.
WAIS Performance I.Q.	86.83	93.20	6.37	99.40	106.68	7.28	n.s.
WRAT Reading S.S.	69.25	72.88	3.62	102.29	106.15	3.85	n.s.
WRAT Spelling S.S.	66.96	69.35	2.38	90.65	95.10	4 45	.001
WRAT Arithmetic S.S.	74.28	79.35	5.06	87.10	97.01	9.91	.001
GATB G	75.96	75.06	- .90	97.58	100.82	3.23	n.s.
Jastak S.D.	18.95	19.67	.71	19.26	18.75	- .50	n.s.
Jastak Mean	73.96	81.76	7.80	103.44	11.41	7.97	n.s.
Hourly Rate	1.17	2.23	1.06	1.41	1.74	.32	.001

* Subgroups are approximately the lower third and upper third of the total population. They were arrived at by adding and/or subtracting half S.D. to/from the mean.

In Table 28 significance is evident and in favor of the high reading skill subgroup on the spelling and arithmetic dimensions. The academic and language bias that has already been mentioned is present in this comparison. The lower reading skill subgroup is significantly different than the upper group in terms of average earning power. The verbal-performance quotient differences may be key factors when related to motor skill productivity as indicated by earnings.

TABLE 29

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison
Reading - Lower Subgroup (X) vs Upper Subgroup (Y)
T (1) = X (Pre) vs X (Post) T (2) = Y (Pre) vs Y (Post)
T (3) = X (Pre) vs Y (Pre) T (4) = X (Post) vs Y (Post)
n=61 n=59

	T (1)	T (2)	T (3)	T (4)
WAIS Full I.Q.	- 2.30*	- 2.90**	- 8.81**	- 9.25**
WAIS Altitude I.Q.	- 1.80	- 3.35**	- 8.78**	-10.08**
WAIS Verbal I.Q.	- 1.82	- 1.78	-10.26**	-10.31**
WAIS Performance I.Q.	- 2.55*	- 3.43**	- 5.51**	- 5.73**
WRAT Reading S.S.	- 2.79**	- 2.43*	-24.20**	-21.82**
WRAT Spelling S.S.	- 1.70	- 2.78**	-15.92**	-16.96**
WRAT Arithmetic S.S.	- 3.45**	- 5.03**	- 7.51**	- 9.98**
GATB G	.24	- 1.00	- 5.94	- 7.99**
Jastak S.D.	- .66	.54	- .30	.90
Jastak Mean	- 2.63*	- 3.02**	-10.47**	-10.62**
Hourly Rate	- 7.45**	- 1.41	- 1.31	2.53*

* Significant at .05 level of confidence (1.96 two tailed t).
** Significant at .01 level of confidence (2.58 two tailed t).
- Indicates direction of significance is towards the second factor or test result.

Table 29 shows that significant differences exist between the lower and upper subgroups on all dimensions (Post X vs Post Y) in favor of the upper subgroup with the exception of earnings which is in favor of the lower subgroup. However, the change statistic (see Table 28) shows that only arithmetic. spelling and earnings can be considered as having meaning in terms of training experiences.

TABLE 30

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison
Reading Achievers vs Reading Non Achievers
n=39 n=39
20 Females-19 Males 15 Females-24 Males

	Reading Achievers		Reading Non Achievers	
	Pre	Post	Pre	Post
Average Reading Grade Equivalent	7.8	10.1	6.5	6.4
Average Spelling Grade Equivalent	6.6	8.3	4.9	5.5
Average Arithmetic Grade Equivalent	6.7	9.1	5.6	6.8
WAIS Verbal I.Q.	98.9	102.8	88.1	90.9
WAIS Performance I.Q.	95.1	103.8	88.2	95.1
WAIS Full Scale I.Q.	97.0	103.0	88.1	92.1
Program Graudates		28		21
Program Dropouts		11		18
Average Age		19.2		19.5
Number Employed and Average Wage	21 $1.21	21 $1.64	18 $1.32	24 $2.00
Post Skill Level				
Skilled		3		2
Semi-skilled		11		13
Unskilled		7		9

Table 30 contrasts reading achievers with reading non achievers. Achievers were those trainees who gained 1.6 or more of a grade equivalent on a pre-post test basis while non achievers were those trainees who gained only 0.2 or less. Persons who fell between 0.2 and 1.6 can be considered as medium achievers. If verbal I.Q. is thought of as an indication of potential academic skills, then the reading achiever subgroup on the average is close to potential and the reading non achiever subgroup is not.

The post grade equivalent standard score comparison shows the following:

	Achievers Verbal I.Q. 102		Non Achievers Verbal I.Q. 90	
Reading	10.1	101 S.S.	6.4	83 S.S.
Spelling	8.3	92 S.S.	5.5	78 S.S.
Arithmetic	9.1	96 S.S.	6.8	85 S.S.

Basic education helped the achievers and non achievers to make pre-post gains on all dimensions except reading for the non achievers. It is highly probable that the non achievers simply could not change in this area. To better explore and illustrate the problem we have prepared Table 31.

TABLE 31

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Illustration of Reading Variables Combined

Section 1

	High Reading Skill	Low Reading Skill	Medium Reading Skill	Totals
Reading Achiever n=39	13 a	5 b	21 c	39
Reading Non Achiever n=39	13 d	15 e	11 f	39
Medium Achieving Group n=102	33 g	41 h	28 i	102
Totals	59	61	60	180

Section 2

Consists Of Cells a, b, d and e From Section 1

	High Reading Skill n=26		Low Reading Skill n=20	
	Achievers	Non Achievers	Achievers	Non Achievers
High Ability	9	5	4	0
Low Ability	0	2	1	11
Medium Ability	4	6	0	4

Wechsler Adult Intelligence Scale Profiles - Achievement Patterns

Table 31 shows the relationship of reading skill and mental ability to reading achievement. Those trainees with low reading skill who were studied as achievers or non achievers (n=20) consist of seventeen males and three females. This population presented an opportunity to find if the Wechsler Adult Intelligence Scale profile of young adult limited readers is similar to the Wechsler Intelligence Scale for Children as reported by Altus (1956), Burks and Bruce (1955), and Kallos, Grabow and Guarino (1961). These investigators report that poor readers typically present low subtest scores on information, arithmetic and coding, and high scores on picture arrangement, block design and comprehension. Some differences existed between the three studies, however, the similarities are profound. Table 32 is a comparison of the Kallos, Grabow and Guarino Wechsler Intelligence Scale for Children subtest means with the Wechsler Adult Intelligence Scale subtest means of our special sample (17 males), and our total post population, and the means of the Chicago Jobs Project Special WAIS sample (Final Report, 1963-64).

TABLE 32

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

WISC and WAIS Profile Comparison (Mean Scores)
(1) Kallos, Grabow, Guarino Study n=37 Males
(2) Special Low Reading Sample n=17 Males
(3) Muskegon Post Experimental Group n=180 Males and Females
(4-5) Chicago Jobs Project Special WAIS Sample n= 65 Males and Females

	(1) WISC		(2) WAIS		(3) WAIS		(4) WAIS Age 18-19		(5) WAIS Age 20-24	
Subtest	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Block Design	11.3	(1)	9.8	(3)	9.8	(7)	7.7	(7)	7.6	(7)
Picture Arrangement	10.7	(2)	10.0	(2)	9.9	(5)	7.8	(5)	8.5	(3)
Object Assembly	10.7	(3)	10.5	(1)	10.7	(2)	7.9	(4)	8.4	(4)
Picture Completion	10.2	(4)	9.8	(4)	9.9	(6)	8.1	(3)	8.3	(5)
Vocabulary	9.6	(5)	7.3	(8)	8.8	(8)	6.5	(10)	6.7	(10)
Comprehension	9.6	(6)	9.3	(6)	11.0	(1)	8.5	(2)	7.0	(9)
Similarities	9.5	(7)	9.5	(5)	10.2	(3)	8.6	(1)	8.7	(1)
Arithmetic	9.3	(8)	6.0	(10)	8.3	(9)	7.0	(8)	7.2	(8)
Coding	9.0	(9)	8.3	(7)	10.0	(4)	7.7	(6)	8.6	(2)
Information	8.5	(10)	7.2	(9)	8.2	(10)	6.6	(9)	7.9	(6)
(Digit Span)			6.4		8.8		8.3		8.9	

After considering the differences in tests and the age of the subjects we are impressed with the rank order comparison in Table 32. Our findings are similar to both the Altus study and the Kallos, Grabow, Guarino study except for the vocabulary and coding subtests. The coding on the WAIS is not as low as the other studies have found to be the case and the vocabulary is totally different. To further understand the implications of the WAIS male profile, we have prepared Table 33.

TABLE 33

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Special Low Reading WAIS Male Profile Sample Means
n=17

Test Results	Mean	Jastak Factors	Mean
WAIS Full I.Q.	92.41	Language	87.17
WAIS Altitude I.Q.	100.00	Reality	111.52
WAIS Verbal I.Q.	88.35	Motivation	79.41
WAIS Performance I.Q.	99.11	Psychomotor	104.47
WRAT Reading Grade Equivalent	4.39	Affect	99.82
WRAT Reading S.S.	72.52	Elation	96.41
WRAT Spelling Grade Equivalent	3.31	Depression	103.64
WRAT Spelling S.S.	67.52	Judgement	104.06
WRAT Arithmetic Grade Equivalent	5.65	Reasoning	95.47
WRAT Arithmetic S.S.	77.58	Hourly Rate (14 Employed)	$2.35

Table 33 shows that the limited male reader has average intelligence, is more performance orientated than verbal, is definitely non academically inclined, and has an achievement pattern of A-R-S. Jastak (1946) calls this pattern the "typical non-reader profile". The Jastak factor scores reveal that this group on the average is realistic, motorically productive, socially involved, self reliant and independent. They are good thinkers but poor writers because of the language-memory problems. It is difficult to determine whether emotional problems are very serious for this group. They do learn and certainly earn as well or better than other subgroups. Gates (1941) cites causal emotional problems as occurring in one fourth of all retarded readers and Robinson (1946) reports nearly one third of the cases in her study as having causal emotional problems. Fernald (1943), Orton (1961) and Jastak (1965) all discuss the school induced frustration the poor reader experiences and the accumulative aspect of failure which over the years causes emotional upset. We will discuss in the summary of this report the great social and personal value that being a partial reader has as compared to being a total non reader and how feelings of failure might be reduced.

To further illustrate the relationship of personality to achievement, we have prepared the following illustration which shows the grade equivalent averages by quadrants for the Interpersonal Checklist special sample (see Tables 24-27).

Experimental Group Special Sample n=115

Pre Average Grade Equivalents	Quadrant 1 n=27 Reading 7.8 Spelling 6.5 Arithmetic 6.9 R-A-S Pattern	Quadrant 2 n=55 Reading 7.7 Spelling 6.0 Arithmetic 6.4 R-A-S Pattern
	Quadrant 3 n=16 Reading 9.9 Spelling 7.6 Arithmetic 7.6 R-S-A Pattern	Quadrant 4 n=17 Reading 9.2 Spelling 7.1 Arithmetic 6.0 R-S-A Pattern

Post Average Grade Equivalents	Quadrant 1 n=22 Reading 8.9 Spelling 7.8 Arithmetic 8.5 R-A-S Pattern	Quadrant 2 n=71 Reading 8.7 Spelling 7.0 Arithmetic 8.3 R-A-S Pattern
	Quadrant 3 n=14 Reading 10.7 Spelling 8.8 Arithmetic 8.5 R-S-A Pattern	Quadrant 4 n=8 Reading 11.4 Spelling 9.2 Arithmetic 8.4 R-S-A Pattern

Quadrants 1 and 2 have lower average scores than quadrants 3 and 4. The R-A-S pattern as opposed to the R-S-A pattern also follows the same quadrant arrangement as the high and low average scores. Extreme R-S-A score patterns can indicate personal disorganization while R-A-S patterns often indicate language retardation.

Program Holding Power

Most administrators of vocational education programs consider holding and staying power as indications of achievement. If youngsters can voluntarily leave a program if they so desire then holding power is a staff concern. If trainees voluntarily stay with a program their continued presence endorses it as being worthwhile. If on the other hand youngsters leave a program in large numbers the appropriateness of the program is suspected. Staying power usually is commended by educators because as behavior it is translated into holding power and also indicates a sense of sticking to something and seeing it through which are values we hope to teach youngsters. Persistence though sometimes can come into conflict with the idea of "striking while the iron is hot." Expediency as an operational value process is difficult to implement in a formal structure such as a school. Even though people learn at different rates, teachers can usually only teach at one rate. Consequently staying power is structurally more compatible than acceleration is to an education program. DeHahn (1963) believes that "accelerated learning programs generally increase the student's motivation to learn." The Muskegon Skill Center tried to capture some of this learning motivation by offering a variety of programs with open ended goals. In this sense the atmosphere of the educational programs at the Muskegon Skill Center tended to be more informal and natural than a high school would presently be able to provide or allow in a daily schedule of classes.

Recognition and acceptance of the personal problems that disadvantaged youth have was another Muskegon Skill Center staff quality which was important to the program. Absences in themselves did not become instructional make-up problems. Homework also was not an issue nor were grades, as we have already discussed, a critical problem. Goals were short term, practical, and meaningful to the life experiences of the trainees. Thus, expediency was not in conflict with persistence, formality was not in conflict with informality, and youthful impulsiveness was not mistaken for impudence or defiance. Also because the Muskegon Skill Center and the programs it offered were all new, untried, unproven and highly experimental, staff expectations were on pragmatic goal basis of "we'll see and find out as we go along with this program."

Program graduation was important but not so important as to preclude the idea that a trainee might have good cause to leave the center In this respect, program conclusion was considered to occur in one of the three ways; graduation, program drop with good cause, or program drop without good cause. Other projects involved in training disadvantaged youth have applied similar concepts to the termination aspect of their program. To illustrate the problem of holding and staying power, we have prepared the following comparisons.

Holding Power Comparison

Trainee Classifications	Muskegon MDTA Project	Chicago Jobs Project (1)	California Oak Glen Project (2)
Number and percent eligible	278 (100%)	1558 (100%)	479 (100%)
Number and percent enrolled	240 (86%)	1558 (100%)	397 (83%)
Number and percent graduated based on eligible figure	122 (44%)	524 (34%)	113 (24%)
Number and percent graduated based on enrollment figure	122 (51%)	524 (34%)	113 (28%)
Number and percent dropped	118 (42%)	1034 (66%)	207 (43%)
Number and percent dropped with good cause	43 (14%)	523 (34%)	N/C
Number and percent dropped without good cause	75 (27%)	511 (32%)	N/C

N/C Not Classified
(1) Chicago Job Opportunities Through Better Skills 1963-64, Final Report.
(2) Peterson, Gertrude, Evaluation Of The Concept Of Trainee Camps For Unemployed Youth, Stanford Research Institute, Menlo Park, California, 1965.

It is difficult to assess the meaning of the above figures even though they are easily compiled. The programs were all different in nature and setting and it is also very probable that the populations served were not similar. The WAIS comparison, if the Chicago WAIS sample can be considered to be representative (see Table 32), indicates differences do exist between the populations. The California Oak Glen Camp Project consisted of only boys who were willing to live away from home. What we want to emphasize here is that three distinct programs in time and place all resorted to a similar rationale to provide an accountability base for value judgments. We question whether the value judgments really apply to the factual achievement records of the trainees.

Many of the trainees who dropped, with or without good cause after four or more months of training, were felt to have made achievement gains that were measurable. Tables 34 and 35 show the differences that exist between program graduates and dropouts. Program dropouts profited as much as a group from the training as did the graduates with the exception of spelling and arithmetic (Table 34). In these areas the graduates made significant pre-post gains in comparison to the dropouts. It is interesting that these gains are in the academic or basic education area.

TABLE 34

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Experimental Group Comparison
Program Graduates (X) vs Program Dropouts (With And Without Good Cause) (Y)
n=122 n=67
By Mean Scores

	Program Graduates		Difference	Program Dropouts		Difference	Significance
	Pre	Post		Pre	Post		
WAIS Full I.Q.	92.19	97.72	5.52	92.77	97.14	4.37	n.s.
WAIS Altitude I.Q.	99.89	106.05	6.15	100.40	104.63	4.22	n.s.
WAIS Verbal I.Q.	92.84	96.49	3.64	94.03	96.22	2.19	n.s.
WAIS Performance I.Q.	92.44	99.87	7.42	92.14	99.00	6.85	n.s.
WRAT Reading S.S.	84.61	89.18	4.57	87.06	90.52	3.49	n.s.
WRAT Spelling S.S.	78.22	82.42	4.20	79.24	82.18	2.94	.05
WRAT Arithmetic S.S.	80.59	89.70	9.10	81.21	86.93	5.72	.01
GATB G	86.19	88.79	2.60	92.35	89.58	-2.76	n.s.
Jastak S.D.	18.59	19.26	.66	18.15	18.39	.23	n.s.
Jastak Mean	87.48	95.19	7.70	88.44	95.48	7.04	n.s.
Hourly Rate	1.29	1.89	.59	1.52	2.07	.54	n.s.

To further explore the meaning of achievement as related to attendance and type of termination, a comparison was made of graduates and dropouts without good cause (Table 35). Significant differences were obtained on full scale I.Q., verbal I.Q., and GATB G. They were all in favor of the graduates. The training program in these areas produced very little change in the dropouts on a pre-post basis. The exception is the GATB G difference which decreased significantly, a finding which may be due to indifferences on the part of the dropout towards the center and its tests. For this reason the GATB G finding is probably not valid.

TABLE 35

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison
Program Graduates (X) vs Program Dropouts (Without Good Cause) (Y)
n=122 n=24
By Mean Score

	Program Graduates		Difference	Program Dropouts		Difference	Significance
	Pre	Post		Pre	Post		
WAIS Full I.Q.	92.19	97.72	5.52	95.17	98.30	3.13	.05
WAIS Altitude I.Q.	99.89	106.05	6.15	100.86	105.56	4.69	n.s.
WAIS Verbal I.Q.	92.84	96.49	3.64	96.04	96.73	.69	.05
WAIS Performance	92.44	99.87	7.42	94.82	100.78	5.95	n.s.
WRAT Reading S.S.	84.61	89.18	4.57	86.34	90.82	4.47	n.s.
WRAT Spelling S.S.	78.22	82.42	4.20	79.28	82.52	3.23	n.s.
WRAT Arithmetic S.S.	80.59	89.70	9.10	81.82	88.30	6.47	n.s.
GATB G	86.19	88.79	2.60	100.25	88.50	-11.75	.01
Jastak S.D.	18.59	19.26	.66	17.69	17.57	- .12	n.s.
Jastak Mean	87.48	95.19	7.70	91.54	97.05	5.51	n.s.
Hourly Rate	1.29	1.89	.59	1.66	1.95	.28	n.s.

For the most part, basic education after four months does not have a real great impact on trainees who stay in comparison to the ones who leave the program. The terms, graduates, dropouts with good cause, and dropouts without good cause are judgmental and circumstantial social concepts or labels that are not directly related to training as such. Earning power as a result of training after a four month period of time or longer is as good for any one group or the other. We can only conclude that the concept of persistent attendance or holding power is only partially related to achievement and occupational outcome. After four months of training, there is no proper or exact length of time which all trainees should be held to for attendance purposes. Some youngsters benefit more from four months of training than others do from twelve months. Yet each youngster is a differently better person as a result of the training.

General Education Development

Trainees with high basic achievement scores and previous school attendance records that indicated reasonable exposure to general education concepts were encouraged to take the General Education Development Tests (G.E.D.). This program of testing, offered through the Muskegon County Community College to persons 18 years of age or older, if successfully passed, is generally recognized as being equivalent to a high school diploma. The trainees who elected to take the G.E.D. test each paid a $15 testing fee out of their own pocket.

To illustrate the meaning of basic education achievement and the General Education Development Tests which were passsed by 49 trainees, we have prepared the following illustration to show some of the features that pertain to the concepts of educational achievement and development.

Experimental Group Basic Skill Achievement
n=180 (See Table 3)

	Pre Average S.S. and Grade Equivalents*		Post Average S.S. and Grade Equivalents	
WRAT Reading	85.44	6.8-6.9	89.63	7.6-7.7
WRAT Spelling	78.56	5.4-5.5	82.34	6.2-6.3
WRAT Arithmetic	80.80	5.8-5.9	88.76	7.8-7.9

The Wrat grade rating ranged from the 1st to the 12th grade.

* Jastak, J. F. and Jastak, S. R., The Wide Range Achievement Test-Manual of Instruction, Guidance Associates, Wilmington, Delaware, 1965.

General Education Development Graduate Trainees
n=49, 41 Experimental Group Trainees-8 Control Group Members
(See Page 8 And Table 2 This Report)

Sex

Males	26
Females	23

Age

18 year olds	3	21 year olds	12
19 year olds	19	22 year olds	6
20 year olds	9		

Marital Status

Single	30
Married	16
Separated, Divorced, widowed	3

Race

White	30
Negro	14
Non White	5

Employment Status

Employed	32
Unemployed	17

G.E.D. Diploma Percentages

Experimental Group n=189
41 G.E.D. Diplomas = 22%

Control Group n=89
8 G.E.D. Diplomas = 9%

Trainee Graduated Group n=122
32 G.E.D. Diplomas = 26%

Trainee Non Graduating Group
(Dropouts) n=67
9 G.E.D. Diplomas = 13%

Achievement And Employment

To better understand the relationship of achievement to employment, as a result of training, we have prepared Tables 36 and 37. These tables show that there are no significant differences on the basic variables between the two groups. Both groups profited equally from the training experience. Gains were made on a pre-post basis on all dimensions except the GATB G by the employed group and on all dimensions except verbal I.Q., WRAT reading, spelling and GATB G by the unemployed group. These findings indicate that unemployed trainees probably have as much potential to become employed as those who already are. In this respect the critical factors are the labor market and those qualities in the unemployed trainees that we may have not measured. By the process of elimination we are reasonably sure that the differences that might exist between the employed and unemployed trainee are not of a basic achievement nature.

To show the impact of training on a group of youngsters as compared to non training we have prepared Table 38. This table contrasts a selected sample of our controls who received no training at all through partial attendance (other controls had three months training or less) with our program graduates who experienced nine and a half months of training. Though the economic gains on an hourly rate are not significant the increased employment rate is. The next section of this report will deal in depth with the economic value of training as it effects employment and earnings.

TABLE 36

Austin and Sommerfeld: Vocational Education For
Disadvantaged Youth Project

Experimental Group Comparison
Employed (X) vs Unemployed (Y)
n=124 n=64

By Mean Scores

	Employed Group		Difference	Unemployed Group		Difference	Significance
	Pre	Post		Pre	Post		
WAIS Full I.Q.	93.34	98.43	5.08	90.56	95.80	5.24	n.s.
WAIS Altitude I.Q.	100.91	106.12	5.21	98.45	104.51	6.06	n.s.
WAIS Verbal I.Q.	93.79	97.03	3.23	92.20	95.20	3.00	n.s.
WAIS Performance I.Q.	93.72	100.70	6.98	89.72	97.43	7.70	n.s.
WRAT Reading S.S.	85.18	89.36	4.17	85.93	90.16	4.22	n.s.
WRAT Spelling S.S.	77.91	81.42	3.51	79.86	84.15	4.29	n.s.
WRAT Arithmetic S.S.	81.16	88.96	7.80	80.12	88.38	8.25	n.s.
GATB G	87.05	90.07	3.01	87.47	86.52	- .94	n.s.
Jastak S.D.	18.55	19.05	.50	18.23	18.79	.55	n.s.
Jastak Mean	89.20	96.27	7.06	85.15	93.42	8.27	n.s.

TABLE 37

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison
Employed (X) vs Unemployed (y)
T (1) = X (Pre) vs X (Post)   T (2) = Y (Pre) vs Y (Post)
T (3) = X (Pre) vs Y (Pre)   T (4) = X (Post) vs Y (Post)

	T (1)	T (2)	T (3)	T (4)
WAIS Full I.Q.	-3.61**	-2.02*	1.34	1.25
WAIS Altitude I.Q.	-3.35**	-2.21*	1.16	.69
WAIS Verbal I.Q.	-2.16*	-1.19	.76	.89
WAIS Performance I.Q.	-4.69**	-2.88**	1.89	1.47
WRAT Reading S.S.	-2.12*	-1.56	- .32	- .32
WRAT Spelling S.S.	-2.10*	-1.81	- .98	-1.29
WRAT Arithmetic S.S.	-5.57**	-3.78**	.64	.28
GATB G	-1.11	.23	- .12	1.03
Jastak S.D.	- .73	- .59	.39	.31
Jastak Mean	-3.12**	-2.14*	1.30	.88

* Significant at .05 level of confidence (1.96 two tailed t).
** Significant at .01 level of confidence (2.58 two tailed t).
- Indicates direction of significance is towards the second factor or test result.

TABLE 38

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Special Sample Experimental And Control Group Comparison
Program Graduates vs Controls Without Training

	Post Data Graduates			Post Data Controls Without Training		
Population Males-Females	n=119	Mean	S.D.	n=32	Mean	S.D.
Highest Grade Completed		10.24	2.00		9.25	1.79
WAIS Full I.Q.		97.72	10.78		93.71	11.35
WAIS Altitude I.Q.		106.05	12.65		102.18	13.60
WAIS Verbal I.Q.		96.49	11.76		90.68	11.48
WAIS Performance I.Q.		99.87	11.26		98.84	11.57
WRAT Reading S.S.		89.18	15.16		86.21	19.78
WRAT Spelling S.S.		83.06	13.50		78.81	14.24
WRAT Arithmetic S.S.		89.70	11.97		78.03	8.51
Jastak S.D.		19.26	5.37		19.55	4.51
Jastak Mean		95.19	18.24		90.55	17.10
Hourly Rate (If Employed) Pre	n=30	1.70	.70	n=17	1.52	.71
Hourly Rate (If Employed) Post	n=89	1.81	.58	n=19	1.92	.59
Jastak Language		96.43	15.92		91.93	14.53
Jastak Reality		107.51	12.26		109.59	11.09
Jastak Motivation		96.99	14.83		94.78	14.28
Jastak Psychomotor		106.65	13.49		104.62	13.33
Jastak Affect		99.42	7.68		100.81	9.27
Jastak Elation		99.98	11.34		99.84	14.27
Jastak Depression		99.09	13.64		102.06	13.51
Jastak Judgement		102.80	9.65		99.59	9.08
Jastak Reasoning		96.90	7.05		97.34	5.70
GATB G	n=92	87.95	15.96		0.00	0.00
Population Males	n=75	Mean	S.D.	n=24	Mean	S.D.
Highest Grade Completed		9.81	1.98		9.09	1.84
Hourly Rate (If Employed)	n=64	2.02	.51	n=16	2.04	.56
WAIS Full I.Q.		98.41	10.90		92.86	12.26
WAIS Altitude I.Q.		106.69	12.55		100.81	14.50
WAIS Verbal I.Q.		96.08	12.27		90.31	12.64
WAIS Performance I.Q.		101.94	11.21		97.40	11.14
WRAT Reading S.S.		87.54	16.69		83.18	15.54
WRAT Spelling S.S.		78.76	12.84		76.63	14.76
WRAT Arithemtic S.S.		87.96	11.74		78.36	9.63
GATB G	n=58	87.91	17.54		0.00	0.00
Population Females	n=44	Mean	S.D.	n=8	Mean	S.D.
Highest Grade Completed		10.97	1.84		9.60	1.71
Hourly Rate (If Employed)	n=25	1.27	.37	n=3	1.27	.05
WAIS Full I.Q.		96.54	10.59		95.60	9.32
WAIS Altitude I.Q.		104.95	12.89		105.20	11.51
WAIS Verbal I.Q.		97.20	10.93		91.50	8.95
WAIS Performance I.Q.		96.34	10.54		102.00	12.45
WRAT Reading S.S.		91.97	11.78		92.90	26.68
WRAT Spelling S.S.		90.40	11.34		83.60	12.36
WRAT Arithmetic S.S.		92.68	11.91		77.30	5.67
GATB G	n=34	88.02	13.08		0.00	0.00

TABLE 38
(Continuation)

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Special Sample Experimental And Control Group Comparison
Program Graduates vs Controls Without Training

	Post Data Graduates			Post Data Controls Without Training		
Population Whites	n=73	Mean	S.D.	n=22	Mean	S.D.
Highest Grade Completed		10.00	1.81		9.08	1.88
Hourly Rate (If Employed)	n=57	1.81	.57	n=16	1.94	.58
WAIS Full I.Q.		98.27	10.02		95.87	11.67
WAIS Altitude I.Q.		106.64	12.22		104.79	14.16
WAIS Verbal I.Q.		96.79	10.94		92.20	12.57
WAIS Performance I.Q.		100.76	11.23		101.50	10.31
WRAT Reading S.S.		88.19	15.54		88.91	21.79
WRAT Spelling S.S.		81.27	13.52		80.54	14.99
WRAT Arithmetic S.S.		90.54	11.80		79.04	9.00
GATB G	n=55	89.67	16.49		0.00	0.00
Population Negroes	n=38	Mean	S.D.	n=10	Mean	S.D.
Highest Grade Completed		10.78	2.14		9.75	1.48
Hourly Rate (If Employed	n=25	1.80	.63	n=3	1.81	.73
WAIS Full I.Q.		95.23	11.03		87.25	7.66
WAIS Altitude I.Q.		103.02	12.65		94.37	8.21
WAIS Verbal I.Q.		95.44	12.25		86.12	5.71
WAIS Performance I.Q.		95.63	9.00		90.87	12.11
WRAT Reading S.S.		89.94	12.67		78.12	8.57
WRAT Spelling S.S.		86.86	12.84		73.62	10.87
WRAT Arithmetic S.S.		88.28	12.64		75.00	6.34
GATB G	n=29	83.82	14.21		0.00	0.00

Jastak Mean And Standard Deviation

Throughout the entire report we have cited the means and S.D.'s that we obtained through the Jastak Clinical Factor Analysis (see Appendix A for a detailed description of this procedure). The mean average for this analysis is 100 with a standard deviation of 21. We believe movement, on a pre-post basis, toward the normal mean and standard deviation can be considered as being positive. As measures, it is also felt that these variables are sensitive of experiential deprivation and can serve as indicators of disadvantagement. The following illustration shows the constancy of behavior among cultural groups on a pre-post basis.

Experimental Group Pre-Post Jastak Standard Deviation Comparison

Pre	Below S.D. 17.5		Above S.D. 24.5		Total Pre-Post Matched n's
Whites	48	44%	13	12%	110
Negroes (Mostly Females)	30	53%	5	9%	57
Other Non-Whites	3	25%	2	17%	12
Post	**Below S.D. 17.5**		**Above S.D. 24.5**		**Total Pre-Post Matched n's**
Whites	48	44%	18	16%	110
Negroes	31	54%	4	7%	57
Other Non-Whites	5	42%	4	33%	12

To drastically modify the above findings a long term educational program starting at an early age would be necessary.

Summary

In this section we have reported on basic education as a compensatory process and have shown the difficulty that exists in dealing with language retardation. We have also stressed the theme that achievement is not solely the result of a simple ability-achievement circular equation. For the population that we have reported on sequential group learning reaches a peak in a four months period of time in the basic skills area. In an occupational education way, caution must be used in linking academic goals with vocational goals. For some individuals or groups these goals may coincide, however, for others there is only a low relationship. High to low value judgments in an occupational education program are to be guarded against. Vocational education should be the primary concern and academic concern should be held in abeyance and be considered as a supplementary service just as counseling is. Reappraisal of the wholesome significance that second to sixth grade literacy has for a society when coupled with personal attitudes of responsibility and occupational skill is necessary. America was made great by workers with an elementary level of academic education. Countless numbers of corporations register an annual profit as a result of the collective efforts of workers with high vocational and occupational skills but with low to average academic skills. The overplay on the measurements of high to low in a narrow academic area should be replaced by a broad concept of occupational and personal education. Even university professors rely heavily on grade school concepts and skills to function as citizens, husbands, fathers and men.

Educational gains are measurable and the measurement methods should be used consistently to document learning. Educational classification systems need to be replaced by learning profile and pattern measurements. Only when this type of an approach becomes routine will educators, be they academic or vocational, be able to answer the central question of not whether a student or trainee graduated but did he learn and how well and in what way.

The growth of a modern idea seems to be taking place in education and is being fostered exceptionally well at the Muskegon Skill Center The idea is that educations business is achievement, all forms of it. In this sense achievement is not a group event but rather a personally appropriate event which a student and his teachers can recognize as being truly unique. Significance can be attached, and rightly so, to the personal aspects of learning and every educational conclusion and learning outcome can be treated with respect. It is this staff respect for the learner and the fact that by learning he can become differently better as a person, no matter how small that difference might be, which best characterizes the Muskegon Skill Centers achievement philosophy.

PART SIX

OCCUPATIONAL STATUS

Other sections of this report have focused on the social, civic, and educational-psychological benefits which result from training the unemployed. This part will deal with questions which are more familiar to the economist.

The Manpower Development and Training Act (MDTA) has as its general objective the training and retraining of unemployed and under-employed workers. These workers would then use their new skills acquired through training to become more gainfully employed citizens. They should then make a greater contribution to the national economy. In economic terms this would be called an "effeciency" objective. However, in the training of the disadvantaged, and more particularly disadvantaged youth, most follow-up evaluations have passed over the "effeciency" objective of retraining (No Longer Superflous, 1965). They customarily show an improvement in education levels, skills and/or attitudes (pointing towards economic benefits) but they seldom provide details on post-training employment and earnings (Cain & Somers, 1966). National information typically does not provide comparisons with control groups or provide information on income of the trainees before and after training. The following evaluation of the Muskegon Center will use incomes before and after training for both trainees and non-trainees. Using this data, total costs of training will be compared to net benefits due to increased employment and earnings earned by the trainees. The questions to be answered in this section are:

> What are the gains in employment and earning relative to the total of costs training?
>
> How do trainees compare with non-trainees?
>
> How long does it take society to recoup the cost of training?
>
> What are the returns on the training investment?
>
> How do employment rates and earnings compare for the different occupations in which training was offered?

As can be seen from examination of Table 39 the experimental or trainee group has made substantial gains in all areas after training. Number employed has increased 57% (from 79 to 124). The wages both for the employed and the average for the entire group have increased. The entire groups' wages increased 119% (from $0.53 per hour to $1.19 per hour). The skill level showed a decrease in the number of those doing unskilled work and a increase in the number of those doing semi-skilled and skilled work.

Examination of the same kind of data in Table 40 for only the graduates of the training program show that 75% were employed at an average hourly rate of $1.80. The average wage for all the graduates was $1.35 per hour. The skill level leans even more toward the skilled areas with 12% skilled, 55% semi-skilled, and only 33% doing relatively unskilled work.

As shown in Table 40 the males had the best rates of employment. The welding, metal machine, and wood machine classes had the best employment

TABLE 39

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Trainee And Control Groups*

Pre Training Experimental Group (n=187)		Pre Training Period Control Group (n=84)	
Employed	79 or 42%	Employed	36 or 43%
Unemployed	108 or 58%	Unemployed	48 or 57%
Average wage for those employed (79)	$1.26 per hour	average wage for those employed (36)	$1.36 per hour
Average wage for entire group (187)	$0.53 per hour	Average wage for entire group (84)	$0.58 per hour
Unskilled	62 or 78%	Unskilled	31 or 86%
Semi-skilled	17 or 22%	Semi-skilled	5 or 14%
Skilled	0 or 0%	Skilled	0 or 0%

Post Training Experimental Group (n=187)		Post Training Period Control Group (n=84)	
Employed	124 or 66%	Employed	46 or 55%
Unemployed	63 or 34%	Unemployed	38 or 45%
Average wage for those employed (124)	$1.79 per hour	Average wage for those employed (46)	$1.82 per hour
Average wage for entire group (187)	$1.19 per hour	Average wage for entire group (84)	$1.00 per hour
Unskilled	50 or 40%	Unskilled	21 or 46%
Semi-skilled	62 or 50%	Semi-skilled	23 or 50%
Skilled	12 or 10%	Skilled	3 or 4%

* Both experimental and control groups pre-training employment and earnings were based on income _anytime_ during the _month_ before training began.

TABLE 40

Austin and Sommerfeld: Vocational Education for Youth Project

Employment Information for Graduates of the Muskegon Skill Center

CLASS	n=119 Of Graduates	n=89 Of Graduates Employed	Percent Graduates Employed	n=59 In Training Related Work	Percent In Training Related Work	n=28 Employed Unskilled	n=50 Employed Semi-Skilled	n=11 Employed Skilled	Percent Employed As Semi-Skilled Or Skilled	Hourly Rate For Employed	Hourly Rate For Graduates
WELDING	17	16	94%	9	56%	5	5	6	69%	$2.25	$2.12
METAL MACHINES	21	19	90%	14	74%	5	10	4	74%	$2.13	$1.93
WOOD MACHINE	16	15	94%	5	33%	8	7	0	47%	$1.91	$1.79
AUTO MECHANICS AUTO BODY REPAIR	16	10	63%	6	60%	6	4	0	40%	$1.71	$1.07
MALE OCCUPATIONS SUB-TOTALS	70	60	86%	34	57%	24	26	10	60%	$2.03	$1.75
FOOD SERVICE	9	8	89%	7	88%	2	5	1	75%	$1.19	$1.06
NURSE AID	13	7	54%	6	86%	1	6	0	86%	$1.10	$0.59
CLERK TYPIST	27	14	52%	12	86%	1	13	0	90%	$1.51	$0.78
FEMALE OCCUPATIONS SUB-TOTALS	49	29	59%	25	86%	4	24	1	86%	$1.32	$0.78
GRAND TOTALS	119	89	75%	59	66%	28	50	11	69%	$1.80	$1.35

rates (90% to 94%) and the best wages for those employed ($1.91 to $2.25) and for the entire class ($1.79 to $2.12).

The females, although showing generally lower wages and rates of employment, had a much better ratio of those employed in training related occupations, and of those employed in higher skilled jobs. Apparently, females were not hired in general areas of unskilled employment. They either used their training and got higher skill level jobs or they were unemployed. One explanation for this is that Muskegon is not a particularly favorable area for the working woman. If a female graduate was not able to get hired in the "shortage" occupation for which she was trained, she probably had few other choices for employment.

Employment and earning rates for males in the experimental group were higher in every area measured (see Table 41) after training compared to before training. The most descriptive term being average wage for the entire group. This went up from $0.71 per hour to $1.64 per hour, an increase of 130%. The control group males also improved in all areas, but they did not improve at the same high rate as that shown by males in the experimental group. The males of the control group raised their average wage from $0.87 per hour to $1.32 per hour. This is an increase of only 51%.

Females in the experimental group did not make any larger employment and earning gains than did females in the control group (see Table 42). As seen in Table 42, females in training did improve over the training time period. This improvement was matched almost exactly by females in the control group. To answer the broad question "Who gains most from the training program?", it must be said that males (Table 40) gain more than females (Table 40) in the area of occupational status.

The comparison of whites and non-whites in the experimental and control groups (see Tables 43 and 44) show that both types of trainees in the experimental group improved more than their counter-parts in the control group.

The average wage for the entire experimental group of white trainees improved from $0.64 per hour to $1.26 per hour, an increase of nearly 100%. The increase of average wages for white non-trainees (control group) went from $0.73 per hour to $1.13 per hour for an increase of only 55%. In the area of employment and earnings, white trainees also improved over white non-trainees.

The average wage for the entire experimental group of non-white trainees improved from $0.36 per hour to $1.05 per hour (see Table 44) an increase of 190%. The increase in average wages for the entire non-white control group only improved from $0.47 per hour to $0.86 per hour, an increase of only 83%. The rate of employment also increased much more in the non-white experimental group than in the non-white control group. The average wage for those employed improved about the same amount in both groups (see Table 44).

While both white and non-white trainees improved more than their respective equals in the control group, the white members of the control group had better employment and earnings than did the non-white trainees. These figures show that -- as expected the non-white trainees made the biggest gains in employment and earnings. However, since this group started so far behind white experimental and control groups they still did not overtake either white trainees or white non-trainees.

TABLE 41

Austin and Sommerfeld' Vocational Education For Disadvantaged Youth Project

Occupational Status Results
Males In Experimental And Control Groups*

Pre Training Experimental Males (n=113)		Pre Training Control Males (n=54)	
Employed	57 or 50%	Employed	32 or 59%
Unemployed	56 or 50%	Unemployed	22 or 41%
Average Wage for those employed (57)	$1.40 per hour	Average wage for those employed (32)	$1.46 per hour
Average wage for entire group (113)	$0.71 per hour	Average wage for entire group (54)	$0.87 per hour

Post Training Experimental Males (n=113)		Post Training Control Males (n=54)	
Employed	93 or 82%	Employed	37 or 69%
Unemployed	20 or 18%	Unemployed	17 or 31%
Average wage for those employed (93)	$1.99 per hour	Average wage for those employed (37)	$1.92 per hour
Average wage for entire group (113)	$1.64 per hour	Average wage for entire group (54)	$1.32 per hour

* Both experimental and control groups pre-training employment and earnings were based on income anytime during the month before training began.

TABLE 42

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Occupational Status Results
Females In Experimental And Control Groups*

Pre Training Experimental Females (n=76)		Pre Training Control Females (n=27)	
Employed	22 or 29%	Employed	6 or 22%
Unemployed	54 or 71%	Unemployed	21 or 78%
Average wage for those employed (22)	$0.90 per hour	Average wage for those employed (6)	$1.08 per hour
Average wage for entire group (76)	$0.26 per hour	Average wage for entire group (27)	$0.24 per hour

Post Training Experimental Females (n=76)		Post Training Control Females (n=27)	
Employed	31 or 41%	Employed	10 or 37%
Unemployed	45 or 59%	Unemployed	17 or 63%
Average wage for those employed (31)	$1.20 per hour	Average wage for those employed (10)	$1.35 per hour
Average wage for entire group (76)	$0.49 per hour	Average wage for entire group (27)	$0.50 per hour

* Both experimental and control groups pre-training employment and earnings were based on income anytime during the month before training began.

TABLE 43

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Occupational Status Results
Whites In Experimental And Control Groups*

Pre Training Experimental White (n=115)		Pre Training Control Whites (n=55)	
Employed	55 or 48%	Employed	29 or 53%
Unemployed	60 or 52%	Unemployed	26 or 47%
Average wage for those employed (55)	$1.33 per hour	Average wage for those employed (29)	$1.38 per hour
Average wage for entire group (115)	$0.64 per hour	Average wage for entire group (55)	$0.73 per hour

Post Training Experimental Whites (n=115)		Post Training Control Whites (n=55)	
Employed	79 or 69%	Employed	35 or 64%
Unemployed	36 or 31%	Unemployed	20 or 36%
Average wage for those employed (79)	$1.83 per hour	Average wage for those employed (35)	$1.78 per hour
Average wage for entire group (115)	$1.26 per hour	Average wage for entire group (55)	$1.13 per hour

* Both experimental and control groups pre-training employment and earnings were based on income anytime during the month before training began.

TABLE 44

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Occupational Status Results
Non-Whites In Experimental And Control Groups*

Pre Training Experimental Non-Whites (n=74)	
Employed	24 or 32%
Unemployed	50 or 68%
Average wage for those employed (24)	$1.10 per hour
Average wage for entire group (74)	$0.36 per hour

Pre Training Control Non-Whites (n=26)	
Employed	9 or 35%
Unemployed	15 or 65%
Average wage for those employed (9)	$1.36 per hour
Average wage for entire group (26)	$0.47 per hour

Post Training Experimental Non-Whites (n=74)	
Employed	45 or 61%
Unemployed	29 or 39%
Average wage for those employed (45)	$1.73 per hour
Average wage for entire group (74)	$1.05 per hour

Post Training Control Non-Whites (n=26)	
Employed	12 or 46%
Unemployed	14 or 54%
Average wage for those employed (12)	$1.87 per hour
Average wage for entire group (26)	$0.86 per hour

* Both experimental and control groups pre-training employment and earnings were based on income anytime during the month before training began.

The respective employment, earnings, and skill levels for trainees made great improvements after the training program. However, an examination of the control group of non-trainees shows roughly the same trends, although not such drastic increases. Both 1965 and 1966 were high employment times in the Muskegon area. Both trainees and non-trainees improved their employment and earnings and skill level. As can be seen from this data, it would be naive to assume that disadvantaged youth will not improve over time unless they have special attention. Control groups are essential to measuring net gains. In each area measured except average wages for those employed, the trainee or experimental group gained more than the control group. This means that these are overall net benefits experienced by trainees as compared to non-trainees

Introductory Comments - Cost Benefit Analysis

Only a modest amount of research has been directed toward the cost-benefit evaluation of the earlier ARA and MDTA training programs (Cain & Somers,1966). Earlier training programs were not primarily concerned with training and hard-core unemployed, the disadvantaged worker, or youth. In fact, the earlier training programs focused on the "cream" of the unemployed (Education and Training, 1966) and (Becker, Haber, Levitan, 1965). These earlier cost-benefit evaluations (Page, 1964), (Somers & Stromsdorfer, 1964) and (Borus, 1964) unanimously concluded that the benefits of retraining to the nation far outweighed the cost to the nation, Margaret S. Gordon, (1965) mentions that cost-benefit analysis data should be compiled for trainees in different kinds of training programs. This data would eventually be extremely helpful as a guide to decisions concerning the relative emphasis to be placed on training for the most highly qualified versus the more disadvantaged among the unemployed.

Published cost-benefit evaluations of the more recent programs for the disadvantaged are very rare. The only currently available cost-benefit evaluation on the training of the disadvantaged worker does a good job evaluating two programs for disadvantaged adults but is limited by lack of income data in its cost-benefit evaluation of the training of disadvantaged youth at the Job Corps camp, Camp Kilmer, New Jersey (Cain & Somers, 1966).

The cost-benefit analysis for the Muskegon Skill Center Population is based on the same trainee and control groups as described throughout this report with the exception of a few members of both control and trained groups who were not available for complete testing but did furnish their employment and earnings information after the training period. Complete employment and earnings data are available for 187 trainees and 84 non-trainees.

The cost-benefit evaluation is based not on individual costs and benefits, but on total costs of the training program to the government, and total benefits to the nation as a whole. The basic formula used (Page, 1964) will be as follows:

Net benefits=(present value factor) x (control group change rate) x
(gross benefits) - (costs).

Before each of these items are explained and figured for the Muskegon data, the following limitations must noted:

1. The samples are comparatively small and are all drawn from a five

county area in Western Michigan. There would be obvious hazards in generalizing from the favorable experiences in Muskegon to the nation as a whole. However, there is little evidence in National data or in other area studies which contradict the favorable results of the Muskegon Training Program.

2. It is assumed, here, that incomes of the trainees and non-trainees will remain relatively constant throughout their working lives. It is expected that the income of both groups will increase. However, since only a three month follow-up of trainees was made, no accurate rate of increase can be determined.

3. Both trainee and control groups pre-training employment and earnings were based on income anytime during the month before training began. Approximately 90% of the trainees were unemployed immediately before training. Their post-training employment is based on income at the time of the interview, approximately three months after the end of training. More complete and continuous employment data would be desireable, but it was beyond the scope of this project. Employment information for both trainee and control groups was gathered in an identical manner, so that these techniques should not be biased towards either trainees or controls.

4. Both trainees and controls may have been competing for the same jobs in the post training period so that displacement could occur. However, all training was in "shortage" occupations and the demand for these occupations in the Muskegon area appears to be far in excess of the supply. For this reason no total displacement of workers is assumed as a result of training.

5. The training of disadvantaged youth definitely affects crime rates, family break-ups, and mental health as potential outcomes of the training program (Cain & Somers,1966). This evaluation will not include these areas of benefit because of the complexity of measuring the actual and economic changes taking place. Any benefits in these factors must be assumed to be over and above the benefits used in this analysis.

6. It has been impossible to distinguish the effects of the specialized skill acquired from the other advantages derived from course completion. The following discussion is based on benefits from the overall training experience.

Training Costs

The economic effeciency to the nation of this training program for disadvantaged youth will be determined by first determining the total costs of the program. Then the total economic benefits will be determined so that the net benefits accruing to the nation can be measured. The total cost equation can be written as follows:

$$C_T = C_E + C_M + C_S$$

C_T= total costs

C_M= subsistence costs

C_E= educational costs

C_S= supervision costs

Since all costs may be expected to accrue during the training period, there is no need to reduce them to present value. Educational costs are those costs paid by the training facility. These costs include costs for operations and maintenance and capital costs. Under this heading one would find such costs as teachers and local administration salaries, books and supplies, lights, heat, and building rental. Many MDTA programs have little or no building rental costs because they are undertaken in public buildings (schools, armories, etc.,). The Muskegon training program was forced to rent a factory building because space was not available in the public schools.

Subsistence costs are based on weekly allowances and transportation costs paid to trainees. The minimum weekly allowance for youth is $20.00. A few trainees are eligible for higher allowances because they have dependents. The daily costs for transportation allowances are also listed as part of the subsistence costs. The trainees were not paid subsistence or transportation for days on which they had "cuts" or unexcused absences. They also were not paid for days on which they were "laid off" or sent home for disciplinary reasons. The average subsistence allowance was assumed to be $32.00 per week or $138.00 per month based on a sample of checks paid to the trainees. The average trainee in the experimental group spent nine months in the program. Because trainees had such little experience in the labor market there was no recorded unemployment compensation subtracted from the trainees subsistence allowances i.e. no transfer payments recorded.

Supervision costs are costs due to national and state administration costs incurred as a result of the training program. It is assumed that it takes two government employees working one year each (at an average salary of $10,000.00 per year) to handle the limited amount of governmental participation in this program (Cain & Somers, 1966). Supervision costs based on local employment office time of fifteen hours per trainee and state office time for paying subsistence allowances based on one half hour per trainee each week of training would be just under $20,000.00 (Borus, 1964). Secondly, opportunity costs are not included because all subsistence costs have been listed as costs, not as transfer payments (Cain & Somers, 1966). The national economy receives as much or more money, by expenditure, from these disadvantaged youth during their training, as before their training period because of the money they receive from their weekly subsistence allowances, even though they are not working.

The total costs of the Muskegon training program for 187 trainees can be listed as follows:

Total Costs

Total Costs = educational costs + subsistence costs + supervision costs

$618,000.00 = $374,000.00 + $224,000.00 + $20,000.00

Total costs per trainee come to $3,305.00 or about $3,300.00

Gross Benefits

The gross benefit figures are based on income for the entire trainee group not just those employed both before and after training.

Average income (for 187 trainees) with retraining = $2,475.00
Average income (for 187 trainees) without retraining = $1,102.00
Increase = $1,373.00

Percent of increase = 119%*

Gross benefits = income with training x number of trainees - income without training x number of trainees.

Gross benefits = ($2,475.00 x 187) - ($1,102.00 x 187)
Gross benefits = $462,825.00 - $206,074.00
Gross benefits = $256,751.00

The formula for finding net benefits is as follows: net benefits = (present value factor) x (control group change rate) x (gross benefits) - (total costs).

When total costs and gross benefits have been figured, the next step is to determine the control group change rate and the present value factor.

Control Group Change Rate

As can be seen in the previous formula, the control group change rate is a multiplier of gross benefits. The reason for including it in the formula is to account for the change in earnings experienced by the control group. If a control group (without the benefit of training) increased earnings as much or more than the trainees did then there would be little value (or net benefits) in the training program. If the control group showed absolutely no change in earnings while the trainees showed a sizeable gain in earnings, then there would be much more value (or net benefits) due to the training. The control group change rate is included in the above formula to accurately determine the next benefits of the Muskegon Area Skill Training Center by allowing for the change in earnings experienced by the control group.

Net change in income of the control group is based on income for all members of the control group (not just those employed) both before and after the training period. The following formula is used: control group change rate

$$= 100 - 100\,\frac{(\text{total income after training} - \text{total income before training})}{(\text{total income before training})}$$

Two earning figures for the 84 members of the control group are needed to calculate the control group change rate: (1) the total income after the training period of $174,720.00 (average income after the training period of $2,080.00 multiplied by the 84 in the control group) and (2) the total income before the training period of $101,304.00 (average income before the training of $1,206.00 multiplied by the 84 in the control group). By substituting these two totals in the formula, it was found that the control group change rate was 27.5 or 27.5%.

As mentioned earlier if the control group had little gain in income then the control group change rate would be very high, because a very small increase ratio would be subtracted from 100 in the formula. However, the actual situation indicates that the controls made a sizeable increase in their

* Transfer payments due to welfare payments and unemployment compensation have been assumed to be zero before and after training for both experimental and control groups. No records were kept of welfare payments or unemployment compensation paid to this group before training because of their young age. A check of Muskegon County records after training showed that about 7 1/2% of the experimental group and 11% of the control group had received welfare payments in 1966.

earnings and so the control group change rate is relatively small. Since this figure is a "rate" it is entered into the net benefit formula as 27.5%, and it reduces the size of the "gross benefit". It is important to note that despite this reduction in gross benefit due to the control group change rate, the benefits still are almost twice as large as the costs in the final net benefits formula.

When total costs, gross benefits, and control group change rate have been computed, the last step needed to complete the net benefits (or cost-benefit) formula is to calculate the present value factor.

Present Value Factor

All the costs involved in retraining have already occured. However, the benefits of the training, hopefully, will continue to show up during the entire working life of each trainee. Gross benefits accruing in future time periods must be reduced to present value so that they can be compared with costs occurring at the present time.

Assuming a continuance of the trainees' earnings differential (over the control) for the rest of his working life, it is possible to appraise the investment in training in terms of its contribution to the increase in the workers capital value (Somers & Stromsdorfer, 1964). The present capital value of such an asset i.e. the trainee, is arrived at by a process called "discounting" the expected flow of money receipts. Discounting means taking out interest in advance (Chandler, 1964). In order to find the present value factor it is necessary to determine a rate of interest or rate of return expected from the investment (the trainee). It is also necessary to determine the number of years that there will be a return from the investment. Once the rate of interest and the number of years have been determined the present value can be found from tables showing "The Present Value Annuity".

The rate of interest used for our purposes will be 5%. "The social cost of capital is approximately 5% -- this is a conservative discount rate for the future benefits of retraining to the economy and the government". (Borus, 1964). The rate of discount used by other investigators ranges from 3% (Cain & Somers, 1966) to as high as 10% (Page, 1964). The lower the rate of interest used the higher the gross benefits of retraining will appear.

The number of years that there will be a return from the investment (the trainee) must also be determined. The trainees in this study averaged 19.5 years of age at the completion of the training period. Assuming that the trainees will work to retirement at 65 years of age, the number of years would be about 45. However, early retirement, leaving the labor market (females), death, and other forms of attrition will prevent each investment (trainee) from yielding a return for 45 years. Since 40% of our trainees were females who will probably leave the labor market earlier than males, the 30% mortality figures from the Commissioners 1958 Standard Ordinary Mortality Tables* will be used without adjustment for those in the 30% that lived to the ages of 30-40-50 etc. This means that the maximum number of

* Our thanks to Mr. David Page (1964) for suggesting use of mortality tables. The Commissioners 1958 Standard Ordinary Mortality Tables were used to arrive at a more realistic number of years figure.

years that a return will be expected from the investment (the trainee) will be 70% of the 45 years or 32 years.

Using a rate of interest of 5% and assuming the number of years to be 32 then the present value factor will be 15.80. Now that we have accounted for all the items in our original formula we can determine the net benefits resulting from the retraining of disadvantaged youth at the Muskegon Area Skill Training Center.

Net benefits may then be written as: N=PV (0B) - C

Net benefits = present value x control group change rate x gross benefits-costs

Net benefits = 15.8 x 27.5% x $256,751.00 - $618,000.00

Net benefits = 15.8 x $70,607.00 - $618.00.00

Net benefits - $1,115,590.00 - $618.000.00

Net benefits = $497,590.00 for 187 trainees

Net benefits = $2,661.00 per trainee

The average net expected life time capital increase over costs is $2,660.00 for each trainee in our experimental group (n 187). When the present value factor is cited it is possible to use the net benefits per trainee figure as a comparison figure. With this method, the Muskegon Area Skill Training Center Program can be compared with other programs of a similar nature. Also it will be possible for the Muskegon Center to compare new groups of trainees with this original group.

In addition to net benefits per trainee, another evaluative method can be used to compare one training program with another. The second method is to determine how many years it takes for the training investment to pay for itself (Cain & Somers, 1966). Attention is called to misleading approaches to costs and benefits of training that are not a cost-benefit analysis in the true sense. A recent article in the Job Corps Newsletter (April, 1966) stated that the costs of Corpsmen training will be repaid in five years. The listing of costs and benefits in the article showed no control group change rate and no present value factor. Total costs per trainee were merely divided by gross benefits to determine a break even point in time. Using this misleading approach with our Muskegon data it could be shown that the cost of the Muskegon trainees' training would be paid for in two and one-half years. However, let us return to this second method for cost-benefit analysis.

The formula used to determine net benefit was PV x (0B) - C

Net benefits = present value x control group change rate x gross benefits-costs.

To find a break even point net benefits are zero, because we don't want any surplus benefits. We want costs to equal present value times annual improvement. The minimum annual improvement figure equals costs divided by present value (the minimum or break even present value is 8.75). The break even point as far as years to pay off the investment will be twelve years.

So, if the present annual improvement figure continues as a constant, this training program will break even or "pay" in twelve years.

Estimating that the programs total investment costs per trainee are $3,300.00 and demanding a 5% return on the investment then the minimum annual improvement needed to break even over the adjusted working life of the trainee would be about $200.00. A $200.00 annual improvement* will make the investment a paying proposition. It could also be stated as being $4.00 per week or about $0.10 per hour on a 40 hour per week basis. The figures for the Muskegon Area Skill Training Center show that the experimental group of trainees on the average had improved over and above the members of the control group by almost $500.00 per year or $9.60 per week or $0.24 per hour on a 40 hour per week basis.

It is readily apparent that under the circumstances and assumptions of this case study, training of disadvantaged youth is very worthwhile. Benefits to the efficiency objective from training the 187 trainees in our experimental group could amount to approximately $500,000.00 or more over the adjusted working life of the trainees.

The differential in post training earnings and employment enjoyed by the trainees cannot all be attributed to their training. However, given the controls attempted in this analysis, it is reasonable to assume that their training played a significant role in providing the noted advantages that trainees had when compared to controls.

It would be extremely useful and helpful to compare different types of training programs, Job Corp, etc. for disadvantaged youth. Given the same initial outlay and discount rate that this type of evaluation (cost benefit analysis) logically supposes to be a fair return from training might be a way to make program comparisons. If this were done it would be possible to understand the value of alternative investments for the betterment of the human resources group, i.e. disadvantaged youth in need of training.

The Muskegon study results must still be taken as tentative. However, the results are based on fairly sophisticated techniques, which are more exacting than most existing evaluations on the effect of training the disadvantaged (Job Corps Staff Newsletter, 1966). It is hoped that other programs for the disadvantaged will be evaluated using these techniques so that program comparisons can be made. It is encouraging to note, that the results of our case studies which indicate positive benefit accruing to the trainees are not inconsistent with the more general evaluations published elsewhere (Report of the Secretary of Labor, 1966).

* Based on the annuity that has the present values listed above for a 32 year time period.

PART SEVEN

CONCLUSIONS

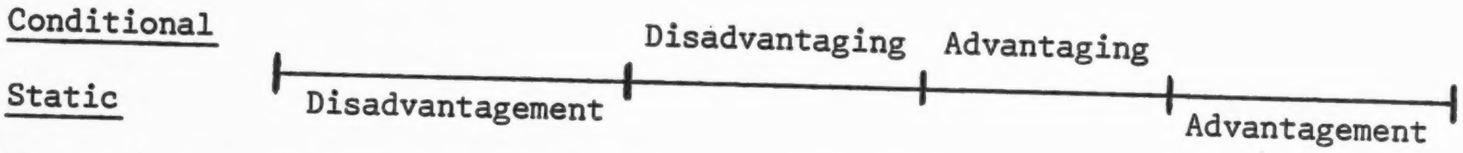
A growing concern over the social-educational-occupational problems that multitudes of young people are experiencing has led to a community commitment to find a way to help make the transition from school to work positive and meaningful. The community is the Greater Muskegon area. The commitment is the Muskegon Area Skill Center operated under the special youth provisions of the Manpower Development and Training Act (MDTA), and the way is through a vocational-occupational education and training program. Many will ask why can't high schools provide the way for a transition from the youth culture (school) to the adult culture (work)? One way of answering this difficult question is to point to the growing complexity and increased specialization that has been taking place over the years in the world of work. Technological advancement and skill requirements have outpaced the typical high schools' capability to prepare all the peoples youngsters for meaningful adult roles. A strong commitment to academic preparation, possibly too strong, as the educational goal to be sought has helped to send unexpected numbers of youngsters to colleges and universities. The other side of this academic emphasis is less positive as equally unexpected numbers of youngsters have been driven out of our American high schools. Some may argue that the youngsters fled the schools instead of being driven. Such an arguement, however, generally reflects a public relations concern rather than an educational concern. With a different educational emphasis, significant numbers of youngsters who have left high school poorly prepared for the occupational world can be helped by vocational training. This training enables youngsters to enter the adult culture by a meaningful but alternate route than is customarily afforded through high school programs.

In recent years, much attention has been directed towards problems of human resource development (Ginzberg, 1966), education and its effects on income (Sexton, 1961), job seeking behavior (Sheppard and Belitsky, 1966), effects of manpower policy (Levitan and Siegel, 1966), the impact of poverty and cultural deprivation (Riessman and Pearl, 1965). The social thought expounded by these investigators is characterized by a common plea for realistic social action and wholesome criticism. The right to be educated or uneducated, rich or poor, is entirely dependent on whether the social circumstances of a society are such that personal choice and action can have a becoming effect. In a society with inferior or non-existant schools, the choice of wanting to be educated is nullified. A society crippled economically by depression also severely limits the desire to seek wealth through a job. The talent and ability of the individual is only as meaningful as the preparation one has received which allows for self expression or self performance in an environmental setting. If the preparation is faulty in that it does not respect the talent or ability of an individual and/or the environment is hostile and overwhelming, failure can occur at an early stage of development. Studies and programs to prevent, intervene or compensate for faulty preparation have been reported by Kirk (1958), Deutsch (1965), Schwertfeger and Weikart (1967), Bloom, Davis and Hess (1965), and many others who have been supported in their efforts by the Office of Economic Opportunity Head Start Programs. The major impetus in these programs is the proposition that behavior in young children can be positively influenced by learning in an appropriate educational setting.

Even though we are not dealing with very young children, this study shows some of the ways in which behavior can be influenced by learning and to what degree. Obviously, some persons are more modifiable than others. The rate of change varies for individuals. In reality, we find that people are doing the best they can under the circumstances. When we change the circumstances (by training) meaningfully all the people change but some more so than others. This finding is not meant to imply that some of the trainees are better persons than others. Rather, the same circumstances have a different impact on different trainees. It may seem like a philosophical play on words but to be different is often to be more human. The training program in that as much as it is able to help the trainee to become more mentally efficient and capable of actualizing previously untapped self potential can be viewed as a humanizing agency. Stringent concern as to whether the overall change rate and/or placement rate for such an agency is high in itself is a poor criterion for program inauguration and evaluative success. External variables play too much of a role in these matters. Sharp and Krasnegor (1966) discuss the need for comprehensive evaluation with both short term and long term provisions. Testing for predictability purposes only should be avoided, Measurement should be used to determine how trainees changed or did not change instead of for selection purposes. We agree wholeheartedly with the Chicago Jobs staff conclusion that, "Our retention rate, training and placement experience would argue strongly that the only valid question that training programs should ask of so called "hard core" youth is whether they want the training." Only after a staff has tried to help youngsters will they know if they can. It is very easy for a public agency to become insular and to lose its helping capability by emphasizing power and aggression through authority and respectability. An agency can maintain its helping role by advocating nurturant and supportive service. Society has to come to grips with the limitations of its institutions rather than to focus on the supposed limitations of the people who participate in the institutional programs. Pseudo forms of support and nurturance can often become an integral part of welfare programs that are lacking in evaluative features. The idea of "we are doing good because we say we are doing good" can prevent evaluative features from being incorporated into the structure of a program. Evaluation as both a process and value has been much neglected in education (Wilhelms, 1967). Meaningful evaluative programs could help to reveal major policy deficiencies such as the educational fallacy that stresses that learning can occur only in a classroom setting which is supported by compulsory attendance laws. Ginzberg (1966) points out that "the real dilemma is the absence of adequate alternatives." Even when alternatives are found and tried out by actual practice and implementation, evaluation will be necessary to validate the concepts involved. Even modest enterprises find bookkeeping and accounting procedures to be helpful. In this sense every educational program should include an evaluation unit with appropriate staff to maintain an on going appraisal of the learning process and the behavioral outcomes that are produced.

The social application of psychological and educational tests provides a way to evaluate programs designed to help people become more environmentally adaptive. The instruments and methods that we have used in this study are an example of how behavioral outcomes can be measured. In creating evaluation models for action programs the instruments to be used ideally should be; (1) capable of being administered individually or in small groups; (2) non verbal in that reading skill is not required to take the test; (3) have profile and computer scoring features. Our follow up was short term and directed to income and occupational status considerations. More time to develope interview techniques and procedures would have been helpful. However, if a choice has to be made, the hard data approach should always be given first priority. Objective-subjective considerations are crucial in that standardized instruments allow for easy replication of study in different parts of the country. The comments that Peterson (1965) has made regarding tests and research instruments used at the California Oak Glen Project are meaningful. She discusses the problems of personality measurement and describes the difficulty that is inherent in most tests of personality -- dependence on reading skill. We found the same thing to be true for the General Aptitude Test Battery (GATB) and the Interpersonal Checklist. An occupational interest test, on the order of the Strong Vocational Interest Blank (1943) or the Minnesota Vocational Interest Inventory (1966), which would not require reading skill, could be a great value to vocational education programs. Also better self concept measurement strategies which do not require reading skill would be helpful. Achievement motivation methodologies patterned along the lines described by McClelland (1961) and Atkinson (1958) coupled with ability clusters and aspiration findings would be extremely helpful in aiding a staff to develope personalized training programs. Expectancies for trainees that are neither over or under the individuals capabilities are very important learning and relationship factors.

There is a need to identify and study the conditions that bring about a state of deprivation in people. Just as there are values, practices, and conditions which either enhance or detract from a persons state of health, we assume that similar factors are evident in the disadvantaging process. Research is needed to isolate and identify those disadvantaging factors which if not prevented or alleviated can bring about a state of disadvantagement. In this sense we see a polarity concept that has a continuum quality which can be illustrated as follows:



The mechanics of how environmental or sensory deprivation can be reversed are difficult to determine. We think that if an advantage or disadvantage is maintained for a reasonable length of time with intensity at a given developmental stage, then the potential for reversibility decreases. Investigators of the growth and development characteristics such as Erikson (1950), Olson (1959), Gesell and Ilg (1949), and Ilg and Ames (1965) have discussed the implications of maturation and readiness for learning. With growth we see that a condition may crystalize and become a state of being which stimulation can not effect greatly. As we pointed out earlier in a reference to Selye's (1956) ideas about stress, the concept of environmental disadvantagement is complicated because of interrelated qualities. Comprehensive research is needed to unravel, verify, define and to measure the concept of disadvantagement both as a condition and a state.

The Jastak altitude or capacity quotient is a very helpful concept with a longitudinal test program in clarifying whether an initial classification of mental retardation was justified. Caution must always be exercised in classifying disadvantaged, impoverished or culturally deprived persons as retarded. The idea of a person being educable mentally handicapped which is so dependent on the definition of the term educable and I.Q. scores should be challenged. Social competency as the major working criteria for the classification and definition of retardation should be reexamined. Behavioral function in a social setting like a school, in comparison, requires much more language skill than reality and motor abilities to succeed. Academic subjects require the use and expression of different abilities than vocational skills do. Many persons for this reason are retarded in school but not in life.

An introduction to a theory of operational behavior has been advanced using the Jastak Method Of Clinical Factor Analysis and Diagnostic Rank Correlation. It is believed that these procedures reveal behavioral organization or lack of it and behavioral goals in an objective-subjective, realism and idealism, sense. Using a coaction grid or compass, we have shown how training and experience effects personality on a pre-post test basis in that more organization and realistic behavior was demonstrated. Personality is believed to be central to all behavioral expressions even though relationships between values and behavior and other characteristics are not clearly understood. Self concept as a personality expression is believed to have improved significantly in the trainee group with the discrepancy between actual self and ideal self rating dimishing on a pre-post test basis as measured by the Interpersonal Checklist. Interpersonal behavior as described by Leary (1957) is believed to be more dependent on and revealing of values than operational behavior. More research on how operational behavior is manifested is needed and will be forthcoming in the future.

In the area of basic education we are in agreement with the Chicago Jobs Project finding that basic academic education is more meaningful when it is directly related to a specific vocational education program. Furthermore, we would not recommend that basic academic education be made a required prerequisite for occupational-vocational training. The basic education unit might better function as a supportive service in a skill center. This is a research conclusion which may not reflect staff agreement yet it is an idea which should be experimented with in future programs. Cooperative research programs with industry and business should also be explored. Surveys to illustrate basic education levels, especially in the language area, in a particular company may help personnel people to better appreciate the immense contribution that workers are making to a company even though their academic achievement may be low. The requirement of a high school diploma or a certain score on a verbal type test as a condition for employment should be challenged.

The goals of vocational-occupational education training programs are presently based on a statistical morality. Because employment and income are key and very visible features, they have an immediate value power. Statistical results are extremely helpful and we have relied consistently on them throughout this report. Employment and income results were statistically reported in a most comprehensive manner in Part Six of this study. Program justification and goals can be supported partially by statistical findings. However, we must ask the same types of questions regarding goals that the Chicago Jobs staff and Peterson at the California Oak Glen Project (1965) asked when they wrote their respective reports. Peterson (1965) succinctly states that the goals at Oak Glen "are very general - to develope the traits and attitudes necessary to become productive members of society. But the goals do not specify whether the program to be successful must develope these attitudes and traits in 10% of the trainees, or in 90%." She further states that "It may be that the Oak Glen Program must be viewed in somewhat the same way as are some medical programs. In the medical profession a single life saved may not be statistically significant but the very fact that one life is saved is considered significant." The Chicago Jobs Staff Final Report (1964) places emphasis on those trainees (76%) placed directly on jobs by the placement staff who have remained employed. Employability appears to be a constant goal in these types of programs. Yet the Chicago staff in describing their population by test findings concludes, "This again, implies that those who attempt to improve the literacy or vocational skills of this population should not expect them to compete with subjects who represent the middle class standards of accomplishment." The Chicago Jobs research group concluded that "we are dealing with a populace which was almost completely unknown in past experience of research of this nature" and that "it is difficult to tabulate success or failure in any way." Our own findings are such that we believe holding power and employability to be very much related to availability of jobs in our local labor market. Employability thus is strongly effected by both educational and non-educational variables. To develope specific goals (that have value goodness) which are direct outcomes of training will require more experimentation and above all continuous research and evaluation. A science of value is a real possibility and will help immensely in avoiding a statistical morality and, hence, a narrow mentality. If evaluation is conducted on the following three planes advocated by Hartman (1967) and if objective-subjective states and individual references are clarified as recommended by this author, in educational evaluation designs, then with time vital answers may be forthcoming.

Hartman Value Dimensions
Evaluation Model - Areas To Be Studied

Axiological Values Applied To	Reveals Ways To Evaluate			
	Self	Individual Person	Groups Of Persons	Training Programs
Intrinsic Value	Self Concept	Ethical Values	Social Justice	Curriculum And Staff Influence On Learning
Extrinsic Value	Interpersonal Behavior	Psychological Traits	Sociological Class	Teaching
Systemic Value	Operational Behavior	Occupational Class or Status	Economic Class	Education

Note: Value dimension and areas of study can be rearranged.

The previous illustration shows that when the three value dimensions are applied to the three individual-group references and the one program category which together constitute trainees and program, then twelve studies are possible for evaluative purposes. These studies can be further subdivided by objective-subjective states and by interpersonal considerations which will help to reveal whether programs are successful (good) or not (bad or ineffectual) for both the group and individual. Present evaluation models do measure some of these topics but not sufficiently well enough to determine and prove to all concerned that the program is an unqualified success. (It should be noted that no educational program, high school and college included at this time can prove unqualified success.)

However, Muskegon Project, the California Oak Glen Project and the Chicago Jobs Project do show that vocational-occupational training programs have been able to help many youngsters (whom high schools have been unable to help) "to develope the traits and attitudes necessary to become productive members of society." In this sense, the Muskegon Area Skill Center is successful in helping youth. An expertise in working with a particular youth group, the disadvantaged dropout, has been acquired by the staff which is recognized with satisfaction and appreciation by the community. A waiting list of potential enrollees which developed during the centers second year of operation (1966-67) adds further testimony to the idea that vocational-occupational education has personal meaning and is socially beneficial.

* * *

Summary Of Conclusions And Recommendations

(1) Vocational-occupational education programs located in community or area training centers can help large numbers of youngsters to acquire the necessary skills to enter the adult work a day world. Research should be carried out at the community level to determine if more of the approximately 850 annual school dropouts would enter a vocational-occupational training program if space were available. Research should also be inaugurated to determine if young 16 year olds who are presently not eligible due to the one year out of school requirement could profit from training and if longer, two years or more, training programs would be beneficial for some trainees.

(2) Vocational-occupational education programs can effect behavioral change in a positive way through the learning process. Such a program has been found to be helpful to both boys and girls, older and younger persons with varying amounts of formal education and persons with and without dependents. Trainees with low I.Q.'s from disadvantaging circumstances are helped the most relatively speaking. This finding is also true for non-whites. For these reasons, it is felt that test scores should be looked upon as relative indicators of efficiency and as a indice as to whether individuals need help in developing and expressing their potential. It is easy for mental inefficiency to appear to be mental deficiency when disadvantaging circumstances have occurred in the life of an individual. Future research designs should provide for control groups who remain in high school and who are not interested in skill center training. Long range follow up to determine the relationship of training to overall increased social competency would be beneficial.

(3) An evaluation unit with appropriate staff should be part of every educational program to measure and appraise the behavioral outcomes that are a result of the learning process. Provision for sharing evaluative findings with the training staff should be a routine feature.

(4) Tests and measuring instruments that can be easily administered, individually or in small groups and which do not require reading ability and which can provide profile scores and be computer scored for research purposes are much needed.

(5) Basic academic education should not be required prerequisite for vocational-occupational education and training. This educational offering should be available to trainees through a supportive service unit. Research on the relationship of basic education, particularly in the language skill and value

areas to employment and income, should be continued and extended beyond the findings described in this study. Cost benefit studies with comparable populations would be very helpful in understanding the meaning of alternative programs.

(6) Research on the concept of disadvantagement as a process which varies from one developmental stage to another and from one individual to another is needed. Hopefully, such research will define, reveal ways to measure, prevent, intervene and provide compensatory services.

(7) The motivational aspect of money, in the form of a training allowance, as opposed to grades or scholarship honors or awards, should be investigated from the standpoint of whether educationally programs deal more ethically with some individuals than with others. Money for learning could concievably be offensive to some youngsters and be treated with indifference just as some youngsters treat grades or scholarship awards.

(8) Training programs should be studied to determine curricular qualities that are common from one center or project to another. How these identifiable aspects of curriculum influence learning and behavior should be investigated also. From such studies, it may be possible to know, not necessarily control, how operational behavior effects a learning set or pattern. The volitional process of learning or not learning, certain skills is not very well understood as a personality component or function.

REFERENCES

Allport, Gordon W., Pattern And Growth In Personality, Holt, Rinehart and Winston, New York, 1937 and 1963.

Altus, Grace T., A WISC Profile For Retarded Readers, Journal of Counseling Psychology 1956, 20, 155-156.

Atkinson, John W. (ed.), Motives In Fantasy, Action, And Society, D. Van Nostrand Company, Inc., Princeton, New Jersey, 1958.

Austin, John J., Educational Evaluation - A Handbook For The Educational Evaluation Form, Research Concepts, Livonia, Michigan, 1964.

Austin, John J., The Nelson Elementary School Evaluation And Guidance Project, An unpublished study, City of Muskegon Public Schools, Muskegon, Michigan, 1966, (Copies available from Phi Delta Kappa, School Research Information Service (SRIS), Bloomington, Indiana.)

Bayley, Monica, A Renewed Effort To Solve The Problem Of Dropout, Reprint from School Life, December 1963-January-February 1964.

Becker, J., Haber, W., Levitan, S., Programs To Aid The Unemployed In The 1960's, W. E. Upjohn Institute for Employment Research, Kalamazoo, Michigan, 1965.

Bloom, Benjamin S., Stability And Change In Human Characteristics, John Wiley and Sons Inc., New York, 1964.

Bloom, B., Davis, A., and Hess, R., Compensatory Education For Cultural Deprivation, Holt Rinehart and Winston, Inc., New York, 1965.

Borus, Michael E., A Benefit-Cost Analysis Of The Economic Effectiveness Of Retraining The Unemployed, Yale Economic Essays, Vol. 4 No.2, Fall 1964, 371-426.

Bruner, J. S., Personality Dynamics And The Process Of Perceiving in R. H. Blabe and G. V. Ramsey (eds.) Perception - An Approach To Personality, New York, Ronald Press, 1951, 121-147.

Burks, Harold F., Bruce, Paul, The Characteristics Of Poor And Good Readers As Disclosed By The Wechsler Intelligence Scale For Children, Journal of Educational Psychology, Vol. 46, 488-493, December 1955.

Buros, Oscar K., (ed.), The Sixth Mental Measurement Yearbook, The Gryphon Press, Highland Park, N. J., 1965.

Cain, Glen, and Somers, Gerald, Retraining The Disadvantaged Worker, Ford Foundation: Evaluation of Retraining Program Research Project, University of Wisconsin, 1966.

Caldwell, Lynton K., Measuring And Evaluating Personnel Training, Public Personnel Review, April 1964, 25 (2) 97-102.

Cattell, Raymond B., The Scientific Analysis Of Personality, Aldine Publishing Company, Chicago, Illinois, 1965.

Cervantes, Lucius F., The Dropout - Causes And Cures, University of Michigan Press, Ann Arbor, Michigan, 1965.

Chandler, Lester V., The Economics Of Money And Banking, Harper and Row Publishers, New York, 1964.

Chenault, Joann and Seegar, James E. Jr., The Interpersonal Diagnosis Of Principals And Counselors, Personnel and Guidance Journal, October 1962, 118-122.

Chicago Jobs Opportunity Through Better Skills Program, 1963-1964, Final Staff Report.

Clark, Kenneth E., Minnesota Vocational Interest Inventory, The Psychological Corporation, New York, 1965.

Deutsch. M., and Brown, B., Social Influences in Negro-White Intelligence Differences, Journal of Social Issues, April 1964, XX No.2, 24-35.

Deutsch, Martin, Institute For Developmental Studies: Annual Report 1965, N. Y. Medical College, New York.

DeHaan, Robert F., Accelerated Learning Programs, Center For Applied Research in Education, Inc., New York, 1963.

deNeufville, Richard, and Conner, Caryl, How Good Are Our Schools? - Army Exam Provides A Clue, American Education Vol. 2, No. 2, October 1966, 1-9.

Edgerton, Harold A., Sylvester, Robert W., The Prediction Of Outcomes Of MDTA Programs - A Pilot Study, Performance Research, Inc., Washington, D.C., 1966.

Ellis, Albert, A Guide To Rational Living In An Irrational World, Prentice-Hall, Englewood Cliffs, New Jersey, 1961.

Erikson, Erik H., Childhood and Society, W. W. Norton Inc.,New York, 1950.

Fernald, Grace M., Remedial Techniques In Basic School Subjects, McGraw-Hill Book Co., New York, 1943.

Garrett, H. E., A Developmental Theory of Intelligence, American Psychologist, 1946, I, 372-378.

Gates, Arthur I., The Role Of Personality Maladjustment in Reading Disability, Journal of Genetic Psychology, LIX September 1941, 77-83.

Gesell, Arnold, Ilg, Frances, Ames, Louise Bates, Youth - The Years From Ten To Sixteen, Harper Brothers, New York, 1956.

Gesell. Arnold. Ilg, Frances, Child Development - An Introduction To The Study Of Human Growth, Harper and Row, New York, 1949.

General Education Development Testing Service, GED Tests, American Council On Education, Washington D.C., 1964.

Ginzburg, E., and Bray, D.W., The Uneducated, Columbia University Press, New York, 1953.

Ginzberg, Eli, The Development Of Human Resources, McGraw-Hill, New York, 1966.

Gordon, Jesse, Project Cause The Federal Anti Poverty Program, And Some Implications Of Subprofessional Training, American Psychologist, Vol. 20, No. 5, May 1965, 334-343.

Gordon, Margaret S., Retraining Programs - At Home And Abroad, Institute of Industrial Relations, University of California, Berkeley, California, 1965.

Gough, Harrison G., and Heilbrun, Alfred B. Jr., The Adjective Check List, Consulting Psychologists Press, Inc., Palo Alto, California, 1965.

Guilford, J. P., Fundamental Statistics In Psychology and Education, McGraw-Hill Book Company, New York, 1956.

Guilford, J. P., Intelligence - 1965 Model, American Psychologist, Vol. 21, No. 1, January 1966, 20-26.

Hamel, Harvey R., Special Labor Force Report #56, August 1965, United States Department of Labor, Bureau of Labor Statistics from The Monthly Labor Review, Washington, D.C.

Harbison, Frederick, Critical Issues In American Manpower Policy And Practice, Princeton, New Jersey, 1965.

Harbison, Frederick, and Corazzini, A. J., Vocational Education A Study Of Benefits And Costs - A Case Study Of Worcester Massachusetts, Department of Health, Education and Welfare, 1966.

Hartman, Robert S., The Structure Of Value - Foundations Of Scientific Axiology, Southern Illinois University Press, Carbondale, Illinois, 1967.

Hartman, Robert S., and Cardenas Trigos, Mario, The Hartman Value Inventory, Miller Associates, Boston, Massachusetts, 1967.

Havighurst, Robert J., and Naugarten, Bernice L., Society And Education, Allyn and Bacon, Inc., Boston, Massachusetts, 1957.

Helms, Harvery, An Investigation Into The Effects Of Cultural Background On Reading Achievement At Steele Junior High School, An unpublished study, City of Muskegon Public Schools, Muskegon, Michigan, 1963.

Hunt, J. McV., Intelligence And Experience, Ronald Press Company, New York, 1961.

Ilg, Frances L., and Ames, Louise Bates, School Readiness, Harper and Row Co., New York, 1965.

Jastak, Joseph F., and Bijou, Sidney, The Wide Range Achievement Test, C. L. Storey Company, Wilmington, Delaware, 1946.

Jastak, J. F., The Jastak Test Of Potential Ability And Behavior Stability, American Guidance Service, Inc., Minneapolis, Minnesota, 1959.

Jastak, J. F., and Jastak, S. R., The Wide Range Achievement Test Manual, Guidance Associates, Wilmington, Delaware, 1965.

Jastak, J. F. and MacPhee, H. M., and Whiteman, Martin, Mental Retardation - Its Nature And Incidence, University of Delaware Press, University Bookstore, Newark, Delaware, 1963.

Job Corps Staff Newsletter, April 1966, Vol. 2, No. 4, What Does The Job Corps Cost? Office of Economic Opportunity, Washington, D.C.

Kallos, George L., and Grabow, John M., and Gaurino, Eugene A., The WISC Profile Of Disabled Readers, Personnel and Guidance Journal, February 1961, 476-478.

Kennedy, Wallace A., A Follow-Up Normative Study Of Negro Intelligence And Achievement, Florida State University, Tallahassee, Florida, 1965.

Kirk, S. A., Early Education Of The Mentally Retarded, University of Illinois Press, Urbana, Illinois, 1958.

Klineberg, O. (ed.), Characteristics Of The American Negro, Harper Co., N.Y., 1944.

Kluckhohm, C., and Murray, H. (eds.), Personality In Nature, Society and Culture, Alfred A. Knopf Inc., New York, 1949.

Kranz, Harry, Washington Charts A Course, The American Child, Vol. 47, No. 1, January 1965, National Committee On Employment Of Youth, New York.

Lafferty, J. Clayton, Values That Defeat Learning, Eighth Inter-Institutional Seminar in Child Development 1962, Reprinted by permission of the Edison Institute, Dearborn, Michigan, 1963.

Lafferty, J. Clayton, Changes In Teacher Self Concept Following Participation In A Consulting Mental Health Program, An unpublished Doctoral Dissertation, University of Michigan, Ann Arbor, Michigan, 1961.

LaForge, Rolfe, Research Use Of The ICL - A Revision Of Supplementary Information On The Research Use Of The Interpersonal Checklist By Rolfe LaForge And Robert Suczek, Oregon Research Institute, ORI Technical Report, Vol. 3, No. 4, Eugene, Oregon, 1963.

Lavin, David E., The Prediction Of Academic Performance, Russell Sage Foundation, New York, 1965.

Leary, Timothy, Multilevel Measurement Of Interpersonal Behavior - A Manual For The Use Of The Interpersonal System Of Personality, Psychological Consultation Service, New Hyde Park, New York, 1956.

Leary, Timothy, Interpersonal Diagnosis Of Personality, The Ronald Press Company, New York, 1957.

Lecky, Prescott, Self-Consistency, The Shoe String Press, Inc., 1961.

Levitan, Sar A., Programs In Aid Of The Poor, W. E. Upjohn Institute for Employment Research, Kalamazoo, Michigan, 1965.

Levitan, Sar A., and Siegel, Irving H. (eds.), Dimensions Of Manpower Policy: Programs And Research, The John Hopkins Press, Baltimore, Maryland, 1966.

Manpower Report Of The President Transmitted To The Congress, March 1966, Washington, D.C.

Manpower Report Of The President Transmitted To The Congress, April 1967, Washington, D.C.

Manpower Development and Training Program, *Educationally Deficient Adults*, U.S. Department Of Health, Education and Welfare, Washington, D.C. 1964.

Masland, Richard L., and Sarason, Seymour B., and Gladwin, Thomas, *Mental Subnormality*, Basic Books, Inc., New York, 1958.

Maslow, Abraham, *Toward A Psychology Of Being*, D. Van Nostrand Co., Princeton, N.J., 1962.

McClelland, David C., and Baldwin, Alfred L., and Bronfenbrenner, Urie, and Strodtbeck, Fred L., *Talent And Society*, D. Van Nostrand Company Inc., Princeton, New Jersey, 1958.

McClelland, David C., *The Achieving Society*, D. Van Nostrand Company Inc., Princeton, New Jersey, 1961.

Meehl, Paul E., *Clinical vs Statistical Prediction*, University of Minnesota Press, Minneapolis, Minnesota, 1954.

Miner, John B., *Intelligence In The United States*, Springer Publishing Company Inc. New York, 1956.

Money, John (ed.), *Reading Disability*, The Johns Hopkins Press, Baltimore Maryland, 1962.

Monroe, Walter S. (ed.), *Encyclopedia Of Educational Research, Revised Edition* The McMillan Co., New York, 1950.

Murray, H. A., *Explorations In Personality*, Oxford University Press, N.Y., 1938.

Murray, H. A., *Thematic Apperception Test*, Harvard University Press, Cambridge, Massachusetts, 1943.

National Committee on Employment for Youth, *Poverty Programs: Applause, Analysis and Accountability*, American Child, Vol. 47, No. 2, New York, 1965.

National Committee on Employment for Youth, *The Job Corps: A Dialogue*, American Child, Vol. 48, No. 1, New York, 1966.

Newbrough, J. R., and Kelly, James G., *A Study Of Reading Achievement In A Population Of School Children* in John Money (ed.) *Reading Disability - Progress And Research Needs In Dyslexia*, The John Hopkins Press, Baltimore, Maryland, 1962.

Niebuhr, Reinhold, *Moral Man And Immoral Society*, Charles Scribner's Sons, New York, 1932.

Ojemann, Ralph H., *Developing A Program For Education In Human Behavior*, State University of Iowa, 1959.

Olson, Willard C., *Child Development*, D. C. Heath and Company, Boston, Massachusetts, 1959.

Orton, S. T., *Reading, Writing and Speech Problems In Children*, W. W. Norton Company, New York, 1961.

Osgood, Charles E., and Suci, George J., and Tannenbaum, Percy H., *The Measurement Of Meaning*, University of Ilinois Press, Urbana, Illinois, 1957.

Page, David A., Retraining Under The Manpower Development Act A Cost-Benefit Analysis, The Brookings Institution, Washington, D.C., 1964.

Pallone, Nathaniel J., No Longer Superflous, The Educational Rehabilitation Of The Hard-Core Unemployed, Final Report to the Office of Manpower, Automation and Training. U. S. Department of Labor, June 1965.

Passow, A Harry (ed.), Education In Depressed Areas, Bureau of Publications, Teachers College Columbia University, New York, 1963.

Pearl, Arthur, and Riessman, Frank, New Careers For The Poor, The Free Press, New York, 1965.

Perrella, Vera C., and Waldman, Vincent, Out Of School Youth - Two Years Later, Special Labor Force Report No. 71, United States Department of Labor, Bureau of Labor Statistics, Monthly Labor Review, Washington D.C., 1966.

Peterson, Gertrude, Evaluation Of The Concept Of Training Camps For Unemployed Youth, Stanford Research Institute, Menlo Park, California.

Piaget, Jean, The Origins Of Intelligence In Children, International Universities Press Inc., New York 1952.

Piaget, Jean, The Construction Of Reality In The Child, Basic Books Inc., New York, 1954.

Pinneau, Samuel R., Changes In Intelligence Quotient, Houghton Mifflin Company, Boston, Massachusetts, 1961.

Problems Of Youth - A Fact Book, Prepared at the request of Senator Claiborne Pell for the Subcommittee on Employment and Manpower of the Committee on Labor and Public Welfare, United States Senate, by the Library of Congress, Washington, D.C., 1964.

Rapaport, D., and Gill, M., and Schafer, R., Diagnostic Psychological Testing, Vol. 1 and Vol. II, Chicago Year Book Publishers, Chicago, 1945-1946.

Raph, Jane B., and Goldberg, Miriam L., and Passow, A. Harry, Bright Under-Achievers, Teachers College Press, Teachers College, Columbia University. New York, 1966.

Report to the President, A Proposed Program For National Action To Combat Mental Retardation, The Presidents Panel on Mental Retardation, 1962.

Riessman, Frank, The Culturally Deprived Child, Harper and Row, Publishers, New York, 1962.

Robinson, Helen M., Why Pupils Fail In Reading, The University of Chicago Press, Chicago, Illinois.

Schafer, Roy, The Clinical Application Of Psychological Tests, International Universities Press, Inc., New York, 1948.

Schreiber, Daniel (ed.), The School Dropout, National Education Association, Washington, D.C., 1962.

Schutz, William C., Firo - A Three-Dimensional Theory Of Interpersonal Behavior, Holt, Rinehart and Winston Inc. New York, 1958.

Schwertfeger, Jane, and Weikart David P., *Ypsilanti Study - The Nature Of Preschool Benefits*, Michigan Education Journal, Vol. 44, No. 25, East Lansing Michigan, 1967.

Selye, Hans, *The Stress Of Life*, McGraw-Hill Book Company, New York, 1956.

Sexton, Patricia C., *Education And Income*, The Viking Press, New York, 1961.

Sharp, Laura, and Krasnegor, Rebecca, *The Use Of Follow-Up Studies In The Evaluation Of Vocational Education*, U. S. Office of Education, Washington, D.C., 1966.

Sheppard, Harold L., and Belitsky, A. Harvey, *The Job Hunt*, The Johns Hopkins Press, Baltimore, Maryland, 1966.

Sofokidis, Jeanette, and Sullivan, Eugenia, *A New Look At School Dropouts*, Health, Education, and Welfare Indicators, U. S. Department of Health, Education and Welfare, Washington, D.C., 1964.

Somers, G. G., *Research Methodology In The Evaluation Of Retraining Programs* University of Wisconsin, 1964.

Somers, Gerald G., and Stromsdorfer, Ernst W., *A Benefit-Cost Analysis Of Manpower Retraining*, University of Wisconsin, 1964.

Strong, Edward K. Jr., *Vocational Interests Of Men And Women*, Stanford University Press, Stanford, California, 1943.

Swanson, Howard, *The School Pushout*, An unpublished study, Muskegon Area Intermediate School District, Muskegon, Michigan, 1964.

Symonds, P. M., *The Ego And The Self*, Appleton-Century Crofts, New York, 1951.

Terman, Lewis M., and Merrill, Maud A., *Measuring Intelligence*, Riverside Press, Cambridge, Massachusetts, 1937.

Terman, L. M., and Merrill, M. A., *Revised Stanford-Binet Intelligence Scale: Third Edition*, Houghton Mifflin Company, Boston, Massachusetts, 1960.

Thorndike, Robert L., *The Concepts Of Over- And Underachievement*, Teachers College, Columbia University, New York, 1963.

Thorndike, Robert L., *Intellectual Status And Intellectual Growth*, Journal of Educational Psychology, 1966, Vol. 57, No. 3, 121-127.

Thurstone, Thelma Gwinn, and Thurstone, L. L., *S.R.A. Primary Mental Abilities Test*, Science Research Associates, Chicago, 1946 and 1965.

Tyler, Leona E., *The Psychology Of Human Differences*, Meredith Publishing Company, New York, 1965.

United States Department of Labor, *Report Of The Secretary Of Labor On Manpower Research And Training Under The M.D.T.A.*, 1966, Washington, D.C.

United States Department of Health, Education and Welfare, *Education And Training - Passport To Opportunity*, Fourth Annual Report on training activities under the Manpower Development and Training Act, 1966, Washington, D.C.

Watson, Goodwin (ed.), No Room At The Bottom, Automation And The Reluctant Learner, Project on the Educational Implications of Automation - National Education Association, Washington, D.C., 1962.

Wechsler, David, The Measurement Of Adult Intelligence, (3rd Edition), Williams and Wilkins, Baltimore, Maryland, 1944.

Wechsler, David, The Measurement And Appraisal Of Adult Intelligence, Williams and Wilkins, Baltimore, Maryland, 1958.

Wilhelms, Fred T. (ed.), Evaluation As Feedback And Guide, Association for Supervision and Curriculum Development, N.E.A., Washington, D.C., 1967.

Wirtz, W. Willard, Secretary of U. S. Department of Labor, Manpower And Automation Research, Sponsored by the Office of Manpower, Automation and Training, 1964.

Yormark, Ben Aaron, Manpower Training: Conceptual Innovations For Public Policy, University of Washington. 1964.

APPENDIX A

DESCRIPTION AND EXPLANATION OF MEASUREMENT PROCEDURES AND INSTRUMENTS

1965-66

A METHOD OF CLINICAL FACTOR ANALYSIS OF THE WISC, WAIS AND WRAT SCALES

Joseph F. Jastak

The procedures described below may be considered a form of logical analysis arrived at by psychological observation. The detailed steps are provisional. They may change in keeping with future research findings.

In general, the method is of value in the understanding of learning behavior and social adjustments resulting from the interaction of a uniquely structured personality and a more or less acceptant environment. The basic principles of this analysis have been tried for about 20 years on numerous individuals by a number of psychologists. The method provides valid information concerning several aspects of the examined person. There tends to be a positive relationship between the factor scores and historical criteria, learning behavior, personality development, emotional, motivational, and cognitive functions.

Psychological factors should not be considered fixed and unmodifiable traits. Instead, they should be thought of as helpful concepts by means of which vital information is communicated to others in an objective manner. They permit a definition of terms, verification of results, comparison with internal or external criteria, and perhaps the development of a theory of personality.

In the following pages, the emphasis will be mainly on the technique of calculating cluster scores. The interpretation of the cluster scores is of course the major purpose and problem of each diagnostic study. Their meaning will be explained in detail in a future publication. Some of the factors are described and interpreted in the Manual of the Jastak Test of Potential Ability and Behavioral Stability, published by the Educational Test Bureau, Minneapolis Minnesota, and distributed by the American Guidance Service, Inc., Minneapolis, Minn. The manner in which the factor scores are interpreted may be best appreciated only by their constant application "in the field".

Steps of Analysis

A blank of the WISC or WAIS Analysis Form should be used in following the individual steps of analysis. A number of specially prepared tables* are also needed for the completion of the analysis. A sample guideline illustrating the use of the analysis blank is shown at the end of these directions.

Step 1. Administer the eleven subtests of the WISC (except mazes) and subtests of the WRAT to children, ages 5-15. Above 16, administer the eleven subtests of the WAIS and only the Reading subtest of the WRAT. The Wisc analysis includes 14 subtests, the WAIS analysis 12 subtests. Enter the respective raw scores in Column 1 of the Form. For the WRAT tests enter the grade ratings in the raw score column.

* These tables may be obtained from Guidance Associates, 1526 Gilpin Ave. Wilmington, Deleware.

Step 2. Convert the obtained raw scores into scaled scores and enter the scaled scores in Column 2 of the Form. The scaled scores are obtained in the following manner.

WISC If only one raw score corresponds to a scaled score, in the age tables of the WISC Manual, use that S.S. and multiply it by 10. A S.S. of 7 would thus become 70. If more than one raw score occurs at any scaled score level, get an interpolated S.S. On page 43 of the WISC Manual, the following raw scores are found:

Test	Raw Scores	S.S. Level	Interpolated S.S. by 10
Information	11	8	80
Comprehension	7,8	6	58,62
Pict. Arrangement	22,23,24	8	76,80,84
Block Design	12,13,14,15,	9	86,88,92,94
Block Design	16,17,18,19,20	10	96,98,100,102,104
Comprehension	23,24,25,26,27,28	20	196,198,200,200,202,204
Similarities	22,23,24,25,26,27,28	20	196,198,198,200,202,202,204
Information(p42)	23,24,25,26,27,28,29,30	20	196,198,198,200,200,202,202,204

In the interpolation, use only five positions for each S.S. level. The S.S. scores for five raw scores at the 10 S.S. level would be 96,98,100,102,104. Only even numbers are used in the interpolation. If more than eight scores are found at any S.S. level, divide the number of raw scores by five and interpolate symmetrically below and above theS. S. listed in the Manual. Interpolations for two to eight raw scores are analogued to the examples listed above.

WAIS Obtain the interpolated and magnified (by 10) S.S. from the white tables (pages 101-110) of the Wechsler Manual in accordance with the age of the examined person. The method of interpolating is the same as for the WISC.

Short Forms of the Vocabulary Subtests. If the short forms of the WISC and WAIS vocabularies are administered, (Jastak and Jastak, Journal of Clinical Psychology, Monograph April, 1964), convert the vocabulary raw scores obtained from the short form into long form equivalents by using Table 1.

WRAT Get the S.S. corresponding to the grade rating and age level in Table 2 (part of 1963 WRAT Manual). Double the difference between the S.S. and 100 and subract it from 100 if the S.S. is below 100, add it to 100 if the S.S. is above 100. For example, a grade rating of 4.3 at age 8 1/2 corresponds to an S.S. of 107. Double the 7 and add the result to 100. S.S.=114. This is the S.S. entered in column 2 of the Analysis Form. A grade rating of 4.3 at age 11 corresponds to an S.S. of 87. Double the difference between 87 and 100 and subtract it from 100. 100 - 26 = 74. Enter this in Column 2 of the Analysis Form.

Step 3. Use Table 3 to convert the interpolated S.S. in Column 2 into S.S. corrected for sex and sampling variation. The original S.S. are listed in the extreme left and right columns of Table 3. The corrected S.S. corresponding to the original S.S. are found under the heading of the respective subtest for which a corrected score is wanted. Enter the corrected S.S. in Column 3 of the Analysis Form for each test.

Step 4. Calculate the mean and the standard deviation of the scores in Column 3 and enter them in the place provided for them at the bottom of the column. The WISC record should contain 14 scores (11 WISC and 3 WRAT); the WAIS record 12 scores. (11 WAIS and WRAT reading). Round the mean off to the nearest whole number: 103.25 = 103, 109.83 = 110; 106.5 = 106; 107.5 = 108. Calculate the standard deviation to two places beyond the decimal.

Step 5. Use the mean obtained in Step 4 to regress the scores in Column 3 to a mean of 100 and enter the regressed scores in Column 4 of the Form. This is done by subtracting from each subtest score the difference between the obtained mean and 100, if the mean is above 100, or by adding the difference between the mean and 100, if the mean is below 100. For example, if the mean is 138, subtract 38 from each score. If the mean is 83, add 17 to each score.

This step renders the correlations between each test and the I.Q. zero and permits us to study the remaining variances independently of the I.Q. level of the person. Each individual is treated as if he were average in general ability, but his personality adjustments may be analyzed without significant loss of variance.

Step 6. Use the S.D. calculated in Step 4 and convert it into a Range Score Value in Table 4. For example, a S.D. of 19.83 on the WISC has a value of +5; a S.D. of 32.20 on the WAIS has a value of -16. Add or subtract this value, depending on whether it is plus or minus, to or from the regressed scores in Table 4. Enter each thus modified score in Column 5 of the Form.

This step makes the intercorrelations between the tests positive or zero. Scores regressed to 100 tend to have as many negative as positive coefficients. An empirical method is used to reduce the negative correlations to zero. It is probably related to rotation methods of conventional factor analysis.

Step 7. Polarity Cluster or Factor. (otherwise known as language mechanics speech facility, verbal factor). It is independent of general intelligence and stands for the neuro-muscular phases of language expression. The weights of the tests used in calculating this factor are marked in Column 6 of the Form. Calculate the weighted mean of this cluster by doubling the scores of those tests assigned a weight of 2 and by using the regular scores of those tests assigned a weight of 1. Enter the mean at the bottom of Column 6. If the mean is above 100, language facility is usually better than average. If the mean is below 100, it is below average.

Regress the scores of this cluster (Polarity) by subtracting the difference between the cluster mean and 100 from each if the mean is above 100, and by adding the difference between the cluster mean and 100 to each score of the cluster if the mean is below 100. If the difference is an odd number, use the larger whole number in regressing. For example, if the Polarity Cluster score is 115, regress by subtracting 8 from each score of the cluster. Enter the regressed scores in the Column right next to and on the right of Column 6. Copy the scores not used in this cluster unchanged from Column 5.

The subtests of this cluster and their weights are: WAIS: Reading 2, Information 2, Comprehension 1, Similarities 1, Vocabulary 2. WRAT: Reading 2, Spelling 2.

Step 8. The Ortho or Reality Factor. Column 7. The subtests in this cluster are: WISC: Comprehension 1, Picture Completion 2, Picture Arrangement 2, Block Design 2, Object Assembly 2. WAIS: same as WISC.

The Ortho Cluster represents behavioral relevance, interpretation of experience, self-awareness, the meaning of personal perceptions of others of physical phenomena.

Calculate the weighted average and regress as in Step 7.

Step 9. The Motivational Cluster or Factor. The subtests are: WISC: Arithmetic 2, Digit Span 1, Coding 1, WRAT Reading 2, Spelling 2, Arithmetic 2, WAIS: WRAT Reading 2, Arithmetic 2, Digit Span 1.

Calculate the weighted score as before and regress.

The M cluster may represent a person's ego control, persistence, consciousness, aspiration level, frustration tolerance, freedom from distraction, and rate of activity level and tenseness.

Step 10. The Somatic or Psychomotor Factor. WISC: Coding 2, Comprehension or Similarities whichever is closer to Coding 1, Block Design 1, WRAT Spelling 1. WAIS: Digit Symbol 2, Similarities or Comprehension whichever is closer to Digit Symbol 1, Block Design 1.

Calculate weighted mean and regress as before.

This cluster stands for physical effeciency, inertia, muscle coordination, skill level, the perception of the directional features of space perception.

Step 11. The Affective Cluster, WISC subtests: Comprehension 1, Picture Completion 2, Picture Arrangement 2, Coding 1. In WAIS, substitute Digit Symbol for Coding. Assign same weights.

Calculate the weighted mean and regress as before.

This cluster tends to define the degree and nature of mood fluctuations and their influence on social and physical behavior. Elation may be associated with excess physical energy, distractibility, exuberence, and an optimistic view of life. Depression is characterized by motor retardation, reduction of activity, loss of interest, fear of loss of possessions and loved ones, and a pessimistic view of life.

The following subtests tend to vary with elation: Digit Span, Picture Completion and Digit Symbol in WISC, Coding in WAIS. Depression affects these tests adversely: Comprehension, Picture Arrangement, Block Design and Object Assembly. The lower the mean score of these clusters the greater the mood disturbances may be.

Step 12. The Cognitive Cluster. This cluster is divided into two parts. Each part is calculated and regressed separately. Judgment: 2 Comprehension, Picture Completion, Object Assembly, and Similarities if it is closer to Comprehension than to Arithmetic, Reasoning: Picture Arrangement, Block Design, and Similarities if it is closer to Arithmetic than to Comprehension.

This cluster is essentially an anxiety variable. The judgment factor is related to feelings of dependence, the ability to evaluate premises of logic. The reasoning factor varies with emotional inadequacies, organization of ideas, consequential reflection, clarity and precision of ideation.

Step 13. The Altitude Score Obtained by the Scanning Method. In Column 12, rank the score of Column 3 in order from highest to lowest regardless of the subtest. (14 ranks in the WISC and WRAT, 12 ranks in the WAIS and WRAT Reading) In Table 5, find the Standard Score corresponding to each rank in first, second, third, fourth, etc... positions. The highest score thus obtained is the Altitude Quotient.

The Altitude score is always larger than the I.Q. It may be as many as 50 points higher, though in the majority of cases it is about 5 to 15 points higher. The A score represents the extreme upper limit of the usual range of I.Q. variations within each individual case. Its correlation with the I.Q. has never been found to be lower than + 80-90, in selected probability samples.

It will be observed that the highest and lowest positions or ranks yield the Altitude Score most frequently. This is as it should be, since the extreme scores are purer measures of the general factor than are the scores near the central tendency.

Intellectual capacity as represented by the Altitude Score is defined as the level of maximum personality integration.

It is the level of complexity and rate at which different parts and aspects of behavior cooperate in affecting an act or in reaching a goal. Intelligence, as here defined, is not an ability to adjust, to reason, to learn, or to be creative. These abilities are the function of the total personality which includes a number of independent feature mainly independent of each other and of the level of integration. Most of these features are non-intellectual in nature and therefore modifiable.

The general factor of capacity probably determines only about 20 per cent of the variance of any one test, though it is impossible to demonstrate this with tests as now standardized.

At least three conditions are associated with the level of integration found at any one time. All three conditions are general in their effect on tests

A. the inherent personality structure or nervous system organization.

B. the rhythm peculiarities of the nervous system.

C. the environmental opportunity to practice integration at ever increasing complexity and rate in the course of individual development.

The determination of mental retardation is made on the basis of the Altitude Score. It is unlikely that any person with an Altitude Score of 80 and higher is mentally retarded, regardless of what his I.Q. is. However, he may be a highly incompetent individual because of inadequacies in the non-integrative functions.

Synthesis of Factor Scores.

It is important that the value of each factor be considered in relation to every other factor. Its absolute score value is probably less significant than its descrepency from other factor scores. For example a high Polarity Score favors escape into unreality. A low score in the Ortho Factor is also related to reality adjustments. The higher the Polarity score is in comparison with the Ortho Score, the greater are the chances that the individual is a highly unrealistic one. Similar relationships exist and may be discovered between the other factor scores.

Glossary of Key Terms.

Cluster or factor: The terms used to describe a score that is factorial or syndromal. Factor scores represent a group of symptoms that were found to have something in common.

Capacity or Altitude: The terms used to describe a score that indicates mental effeciency in relation to the I.Q. The relative capacity score gives a fair estimate of the individual's potential ability in comparison with his level of actually demonstrated ability.

Stability: A score that describes those facets of adjustment or behavior which are independent of the person's intelligence.

Range: A score that is derived from a standard score by statistical formula.

Name ______ Sex M Age 19-10 Examiner ______ Date ______

WRAT Formula is
100 -62 = 38 x 2 = 76
100 - 76 = 24
If over a 100 Add
To a 100

WAIS Manual p101-110
Interpolate SS x 10
For Single #
If more #s (23-24)
SS #7 x 10 = 70
66 68 70 72 74
21 22 23 24

WRAT Grade
Rating For SS
According To Age

Use Corrected
SS sheets For
WAIS M or F

Cluster
Value #
2 = 2X
1 = 1X
Rest do
Not use

To Regress
Add to or Sub
only #s with
Value #s or
Letters - Use
Rest #s As Are.

Use Nearest
D# To 2D#
2D - 89
1D - 94
D - 91
D - 110

Use Nearest
E# To 2E#
2E - 99
E - 108
E - 110

Use + Add JR#
with Either
J or R Group
whichever
it is Nearest
To Comp or
Arithmetic

Rank
Order
#s
in
Col 3

Use
Conversion
Table For
WAIS
Subtest
Ranks
For the
Altitude
Scores

Test	1 Raw Sc	2 Modif SS	3 Corr SS	4 Regr Sc	5 Range Sc	6 Polar Sc	Regr	7 Ortho Sc	Regr	8 Motiv Sc	Regr	9 Somat Sc	Regr	10 Affect Sc	Regr	11 Cogn Sc	Ranks	12 Scan Sc	
1.8 Read	62	24	40	78	71	2 142	85		85	2 170	118		118		118		93	74	1
Inf	5	50	48	86	79	2 158	93		93		93		93		93		87	76	2
Comp	9	58	57	95	88	1 88	102	1 102	94		94	1? *	* 94	1D *	94	J 94	82	77	3
Ari	1	10	14	52	45		45		45	2 90	78		78		78	R * 78	76	77	4
Sim	4	58	57	95	88	1 38	102		102		102	1? 102	88		88	JR 88	75	79	5
D.Sp	7	40	44	82	75		75		75	1 75	108		* 108	E 108	106		66	75	6
Voc	24	74	75	115	106	2 212	120		120		120		120		120		57	72	7
D.Sy	43	82	93	131	124		124		124		124	2 248	110	1E	110		57	75	8
P.C.	10	78	76	114	107		107	2 214	99		99		99	2E 198	97	J 97	48	72	9
B.D.	28	88	82	120	113		113	2 226	105		105	1 105	* 91	D 91	101	R 101	44	73	10
P.A.	14	62	66	104	97		97	2 194	89		89		89	2D 178	99	R 99	40	74	11
O.A.	27	84	87	125	118		118	2 236	110		110		110	D	110	J 110	14	65	12

+38 -7 +14 -8 +33 -14

Tot 739
M 61.58
S.D. 21.84

100
-62
+38
+ to
Col 3

Tot 8 688
PM 86

Tot 9 972
OM 108

Tot 5 335
MM 67

Tot 4 455
SM 114

Tot 6 575
AM 96
E Tot 306
Ela 3 102
D Tot 269
Dep 3 90

3 or 4
J Tot 389
JM 97
3 or 4
R Tot 278
RM 93

Altitude
Score 79

Sq Col 3 #s + Add = 51233
÷ by 12 = 4269.4 Sq M

Add Col 3 (739) ÷ by
12 For M

Sq M (3792.0) + -
From Sq Col 3 M
4269.4 - 3792.0 =
477.4

Find Sq Root of
Bal (477) For S.D.
in Math Book
Table

Use Table IV
Range Score
WAIS Values
To Regress
Col 5

Divide Tot
by Sum of
Value #s
For Mean

100 - 86 = 14
Use +14 to
Regress
only the
#s used
in Cluster
Rest are
Left Same

108
-100
-8
Subtract
From #s
Used in
Cluster.

100 - 67 = 33
+33 to
#s Used
in Cluster.

6|575
96

102 - 106 = -2
-2 All E #s

100 - 90 = +10
to All D #s

High # in
Scan Col
is the
Altitude
Score

	Jastak Group Factors	Effect On					Prevocational Skills	
		Reading English	Written Spelling	Arith-metic	Compre-hension	Conduct	operative, lathe, drill press, assembly production, etc.	Mechanical, art, design, construction, engineering
A.	Language High:	Good	Good	No effect except in language problems	No effect except in verbal medium	Conforming	No effect except in reading instructions	No effect except in following instructions
	Language Low:	Poor	Poor	No effect except in language problems	No effect except in verbal medium	Tends towards sociability and aggression	None	Increase degree of compensation for verbal inadequacies and insures greater achievement
B.	Reality High:	Average to poor	Poor	No special effect	Excellent	Sociable outgoing demonstrative with problems	Reduces chances of success at routine	Very good
	Reality Low;	Excellent	Good	Good	Poor	Withdrawing insecure sensitive no behavior problems	Excellent	Poor
C.	Motivation High:	Excellent	Excellent	Excellent	No direct effect	Well controlled dependable	Very Good	Average
	Motivation Low:	Poor	Very poor	Poor to Average	No effect	Distractible unsettled nonconformist overly aggressive or unduly dependent	Poor	Average
D.	Psychomotor High:	Good	Very good	No effect	Good	Well adjusted	Excellent	No particular effect
	Psychomotor Low:	Poor	Very poor	Average to poor	Poor	Indifferent unproductive	Poor	No effect
E.	Affect High:	Good	Good	Good	Poor	Well modulated hypomanic, active socially involved	Less than average	Good
	Affect Low:	Good	Good	Poor	Poor	Rigid, inflexible indifferent	Good	No effect
F	Cognition High:	Reading none English important	None None	Good Good	Good Good	Independent but conformist, assertive, self reliant high goals	No effect	Very good
	Cognition Low:	English-poor	None	Poor	Poor	Dependent passive, insecure low aspiration negative non conformist	No effect	Very poor

DIRECTIONS FOR RANK CORRELATION ANALYSIS WITH DIAGNOSTIC CATEGORIES

By J. F. Jastak

Step 1. Obtain the "Corrected Standard Scores" in column 3 of the WAIS or WISC and WRAT analysis form for clinical factoring.

Step 2. Rank these scores from highest to lowest, averaging the ranks of two or more identical scores. (see attached examples) Only 12 tests are ranked for both WAIS and WISC, since these 12 were used in the actual research. Ignore the last two items on the WISC form.

Step 3. Obtain the differences between the ranks of the individual and the ranks listed for each diagnostic category on the special sheet provided. The WISC and WAIS ranks are printed on this sheet separately not because they are different but merely to adapt them to the different order of analogous sub-tests as they are printed on their respective Wechsler form. The differences can best be obtained by superimposing and aligning the sheet of established test ranks with those on the individual's analysis form.

Step 4. Square and sum the differences obtained in Step 3. Divide this by 286 which is the divisor for 12 ranks in the formula for rhos and subtract this quotient from 1.00 if you wish to calculate the actual coefficients. If this step is not wanted, the sums alone can be used for diagnostic interpretation. The higher this sum, the lower the coefficient with the correlated category and vice versa.

The values corresponding to some rho levels are given below:

Sum 2 diff	Rho	Sum 2 diff	Rho
0	+1.00		
29	+ .90	315	-.10
57	+ .80	343	-.20
86	+ .70	372	-.30
114	+ .60	400	-.40
143	+ .50	429	-.50
172	+ .40	458	-.60
200	+ .30	486	-.70
229	+ .20	515	-.80
257	+ .10	543	-.90
286	+ .00	572	-1,00

Interpolate for intermediate levels. For example, a sum of 158 would correspond to a rho of + .45, a sum of 530 to a rho of -.85. A negative coefficient means that the individual's test pattern is antithetical to the correlated category. Even if none of the coefficients is significantly positive (about + .40), all coefficients are significant as diagnostic indicators. Usually, the highest coefficient points in the direction of the problem.

Step 5. It is usually advisable to calculate the rho for all listed categories because the arrangement of the rhos from low to high may be of diagnostic interest.

Step 6. Remember, not all diagnostic categories are represented here. Therefore, a great deal of opportunity for research and refinement exists.

WAIS DIAGNOSTIC RANKS

Based on Research By J. F. Jastak*

Test	Normal Hysteroid Overresponsive		Aggressive Unmotivated Irresponsible	Fearful Anxious Hypochondriac		Affective Elated Depressed		Autistic Withdrawing Suspicious		Disorganized Impulsive Perseverating		Masculine Feminine	
	M	F	M and F	M	F	M	F	M	F	M	F	M	F
W Read	10	12	12	9	9	3	1	2	1	1	1	8	1
Inf.	11	8	10	6	5	4	6	1	3	3	3	2	7
Comp.	3	7	4	3	1	8	8	6	10	9	6	6	5
Arith.	7	9	8	11	2	2	5	8	7	5	8.5	7	12
Sim.	2	5	6	5	3	6	3	5	6	7	11	3	2
D.Sp.	8	10	9	12	11	12	4	7	4	2	8.5	11	11
Voc.	12	11	7	1	4	1	2	3	2	8	2	5	3
D.Sy.	1	2	11	4	6	10	10	12	11	12	12	12	4
P.C.	6	3	3	2	8	11	7	4	12	6	7	4	10
B.C.	5	4	2	7	10	5	11	9	5	11	10	1	6
P.A.	9	1	5	8	7	9	12	10	9	4	4	9	8
O.A.	4	6	1	10	12	7	9	11	8	10	5	10	9

* J.F. Jastak, Ranking Bellevue Subtest Scores for Diagnostic Purposes, J. Consult. Psychol, 1953, 6, 403-410.

WISC DIAGNOSTIC RANKS

Based on Research By J, F, Jastak

Test	Normal Hysteroid Overresponsive		Aggressive Unmotivated Irresponsible	Fearful Anxious Hypochondriac		Affective Elated Depressed		Autistic Withdrawing Suspicious		Disorganized Impulsive Perseverating		Masculine Feminine	
	M	F	M and F	M	F	M	F	M	F	M	F	M	F
Inf.	11	8	10	6	5	4	6	1	3	3	3	2	7
Comp.	3	7	4	3	1	8	8	6	10	9	6	6	5
Arith.	7	9	8	11	2	2	5	8	7	5	8.5	7	12
Sim.	2	5	6	5	3	6	3	5	6	7	11	3	2
Voc.	12	11	7	1	4	1	2	3	2	8	2	5	3
D.Sp.	8	10	9	12	11	12	4	7	4	2	8.5	11	11
P.C	6	3	3	2	8	11	7	4	12	6	7	4	10
P.A.	9	1	5	8	7	9	12	10	9	4	4	9	8
B.D.	5	4	2	7	10	5	11	9	5	11	10	1	6
O.A.	4	6	1	10	12	7	9	11	8	10	5	10	9
Cod.	1	2	11	4	6	10	10	12	11	12	12	12	4
W Read	10	12	12	9	9	3	1	2	1	1	1	8	1

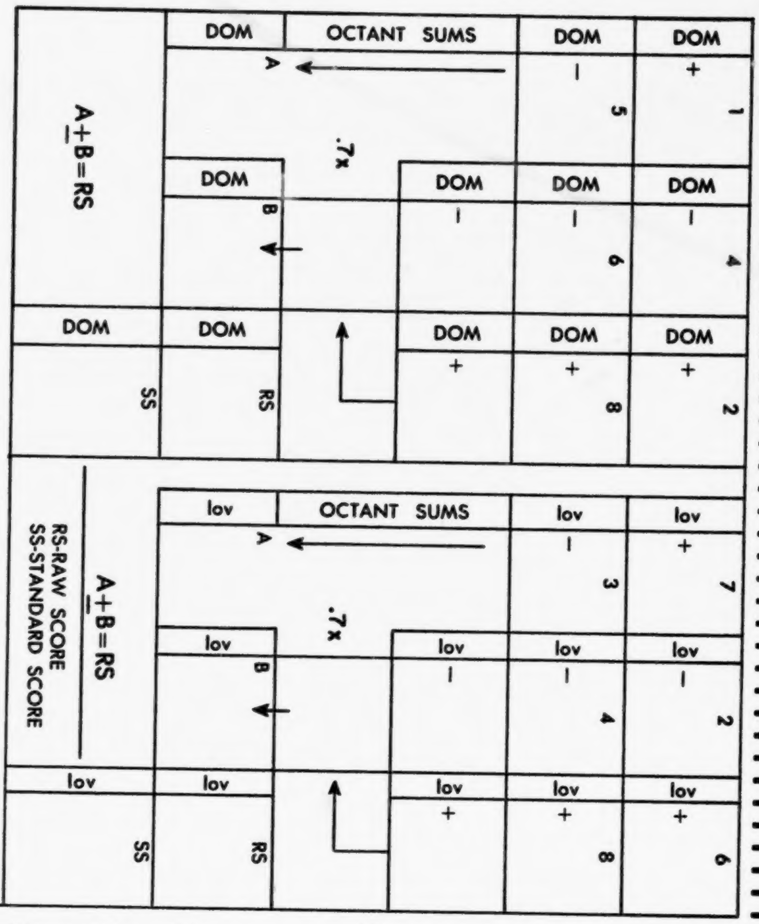
THE INTERPERSONAL CHECK LIST

The Interpersonal Check List represents one of several measuring instruments for a multi-level functional theory of personality. This measuring device has been designed by Rolfe LaForge, Ph.D., and Robert Suczek, Ph.D., and other members of the Kaiser Foundation Psychology staff. The interpersonal theory of personality and the functional methodology that it employs was formulated by the staff of the Kaiser Foundation Research in Psychology under the direction of Timothy Leary, Ph.D., (1957). Additional work with the Interpersonal Check List as a research tool has been carried on by La Forge (1963) at the Oregon Research Institute.

Much effort has been devoted to the development of different scoring procedures for the Interpersonal Check List. Leary (1956) presents a set of norms and a scoring rationale which provides for a dominant-submissive, hostile-affectionate axis with summary standard scores. This system is based on octant (eight) sums, with no allowance for item intensity, which are multiplied by .7, the value of sine 45°, and which produces the two summary indices that have been mentioned. This procedure is illustrated on the following page where a sample IBM 1230 version of The Interpersonal Check List - Muskegon Form, which was prepared by Normand Adair and this writer, is presented. This version of the Interpersonal Check List allows for rapid scoring and/or IBM automatic key punching of items checked into cards for item analysis and computer processing. Large sample research designs are feasible with this form and procedure. LaForge (1963) prefers a subdivision of sixteenths and also provides for an Average Intensity (AIN). Score and a Total Number of Items Checked (NIC) Score. Gynther is reported as viewing the Interpersonal Check List standard score comparison of means as being a more sensitive measure while chi square octant score comparisons produce a more descriptive measure. (Chenault and Seegars, 1962). Lafferty, (1961) in an unpublished doctoral dissertation, devised a three level classification system which featured low, normal and high ranges to determine negative and positive pre-post test changes. Fifteen different types of changes are described as possible outcomes and which allow for intensity values to be accounted for. This is a key consideration that the Interpersonal Check List researcher has to consider, for the difference between "able to give orders" at intensity level one and "dictatorial" at intensity level four, is profound. Directionally, both objectives point the same way from a behavioral view but the seriousness aspect has to be considered also. Ideally, it would be extremely helpful if a simple combined directional-intensity scoring system could be developed. However with rapid machine scoring assistance and improved reproduction techniques, individual item consideration and group item analysis is a most revealing technique.

The Interpersonal Check List

This form has been prepared by Normand Adair and John Austin with the approval of Timothy Leary, Ph.D. and Psychological Consultation Service. The Interpersonal Checklist was developed by Rolfe LaForge, Ph.D. and Robert Suczek, Ph.D. and other staff members of the Kaiser Foundation Research in Psychology.



NAME ______________________________ DATE __________
LAST FIRST MIDDLE

AGE ______ SEX ______ (M OR F) DATE OF BIRTH ________ GRADE OR CLASS ______

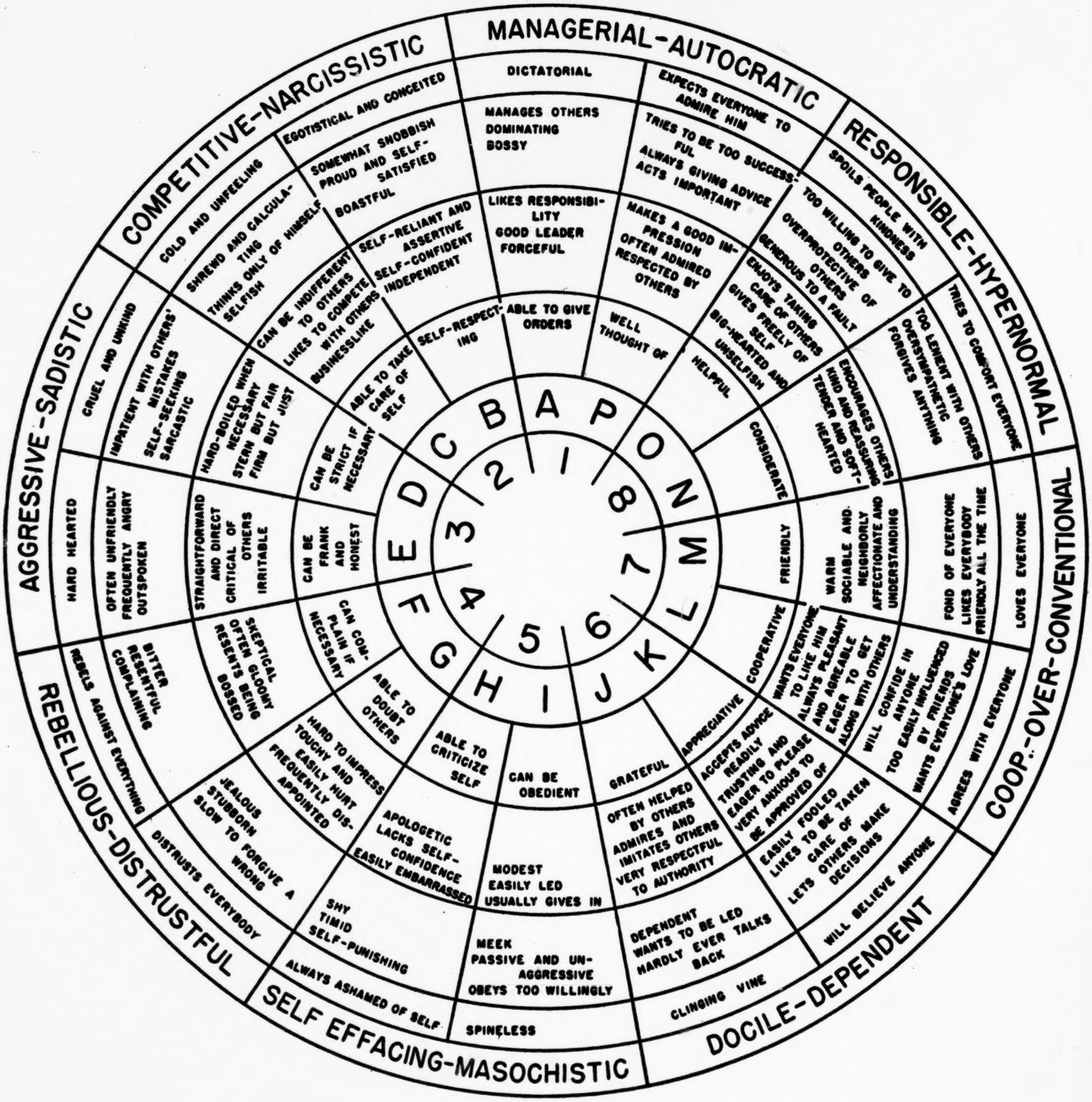
SCHOOL ____________________ CITY ____________________

NAME OF PERSON BEING RATED: ______________________________

Instructions: Read these words and phrases quickly. Make a mark between the lines in front of each item which you feel is generally descriptive of the person you are rating. Be sure to mark within the lines. Do not be concerned about duplications contradictions or being exact. If you feel much doubt whether an item applies at present leave it blank. Erase changes completely.

1 ===== well thought of
2 ===== makes a good impression
3 ===== able to give orders
4 ===== forceful
5 ===== self-respecting
6 ===== independent
7 ===== able to take care of self
8 ===== can be indifferent to others
9 ===== can be strict if necessary
10 ===== firm but just
11 ===== can be frank and honest
12 ===== critical of others
13 ===== can complain if necessary
14 ===== often gloomy
15 ===== able to doubt others
16 ===== frequently disappointed
17 ===== able to criticize self
18 ===== apologetic
19 ===== can be obedient
20 ===== usually gives in
21 ===== grateful
22 ===== admires and imitates others
23 ===== appreciative
24 ===== very anxious to be approved of
25 ===== cooperative
26 ===== eager to get along with others
27 ===== friendly
28 ===== affectionate and understanding
29 ===== considerate
30 ===== encourages others
31 ===== helpful
32 ===== big-hearted and unselfish
33 ===== often admired
34 ===== respected by others
35 ===== good leader
36 ===== likes responsibility
37 ===== self-confident
38 ===== self-reliant and assertive
39 ===== businesslike
40 ===== likes to compete with others
41 ===== hard-boiled when necessary
42 ===== stern but fair
43 ===== irritable
44 ===== straightforward and direct
45 ===== resents being bossed
46 ===== skeptical
47 ===== hard to impress
48 ===== touchy and easily hurt
49 ===== easily embarrassed
50 ===== lacks self-confidence
51 ===== easily led
52 ===== modest
53 ===== often helped by others
54 ===== very respectful to authority
55 ===== accepts advice readily
56 ===== trusting and eager to please
57 ===== always pleasant and agreeable
58 ===== wants everyone to like him
59 ===== sociable and neighborly
60 ===== warm
61 ===== kind and reassuring
62 ===== tender and soft-hearted
63 ===== enjoys taking care of others
64 ===== gives freely of self
65 ===== always giving advice
66 ===== acts important
67 ===== bossy
68 ===== dominating
69 ===== boastful
70 ===== proud and self-satisfied
71 ===== thinks only of himself
72 ===== shrewd and calculating
73 ===== impatient with others' mistakes
74 ===== self-seeking
75 ===== outspoken
76 ===== often unfriendly
77 ===== bitter
78 ===== complaining
79 ===== jealous
80 ===== slow to forgive a wrong
81 ===== self-punishing
82 ===== shy
83 ===== passive and unaggressive
84 ===== meek
85 ===== dependent
86 ===== wants to be led
87 ===== lets others make decisions
88 ===== easily fooled
89 ===== too easily influenced by friends
90 ===== will confide in anyone
91 ===== fond of everyone
92 ===== likes everybody
93 ===== forgives anything
94 ===== oversympathetic
95 ===== generous to a fault
96 ===== overprotective of others
97 ===== tries to be too successful
98 ===== expects everyone to admire him
99 ===== manages others
100 ===== dictatorial
101 ===== somewhat snobbish
102 ===== egotistical and conceited
103 ===== selfish
104 ===== cold and unfeeling
105 ===== sarcastic
106 ===== cruel and unkind
107 ===== frequently angry
108 ===== hard-hearted
109 ===== resentful
110 ===== rebels against everything
111 ===== stubborn
112 ===== distrusts everybody
113 ===== timid
114 ===== always ashamed of self
115 ===== obeys too willingly
116 ===== spineless
117 ===== hardly ever talks back
118 ===== clinging vine
119 ===== likes to be taken care of
120 ===== will believe anyone
121 ===== wants everyone's love
122 ===== agrees with everyone
123 ===== friendly all the time
124 ===== loves everyone
125 ===== too lenient with others
126 ===== tries to comfort everyone
127 ===== too willing to give to others
128 ===== spoils people with kindness

INTERPERSONAL CHECK LIST
ILLUSTRATING THE CLASSIFICATION OF INTERPERSONAL BEHAVIORS INTO 16 VARIABLE CATEGORIES



GENERAL APTITUDE TEST BATTERY DESCRIPTION

United States Department of Labor
Bureau of Employment Security
Washington, D.C.

General Description of the Tests

Of the 59 different tests used in the several factor analysis studies, 54 (48 paper-and-pencil tests and 6 apparatus tests) were constructed by the USES. The other five tests were the O'Rourke Survey Test of Vocabulary (Form X4), the Revised Minnesota Paper Form Board (Likert and Quasha), the Minnesota Spatial Relations Test, the Minnesota Manual Dexterity Test-Placing, and the Minnesota Manual Dexterity Test-Turning.

The 54 USES tests included in the factor analysis studies are representative of the approximately 100 tests developed by the USES over a period of years. (See Chapter 1 of Section III of this Guide). During the intial phases of the USES testing program, it was intended to construct aptitude tests which appeared to have validity for occupations but which were not so analogous to specific jobs as to impair the applicability of the tests for widespread use. Emphasis was placed on development of tests of perceptual and spatial ability and of dexterity, although some verbal and "intellectual" tests were also devised. In general, the tests are speed tests with time limits for the most part of about 5 minutes. The individual tests are homogeneous in content; that is, each test is made up of items which appear to measure only one type of ability. All of the tests are so constructed that they can be easily administered by personnel without extensive technical training.

The Factors

Thurstone's methods of multiple-factor-analysis were employed to extract the centroid factors from the correlational matrices and to rotate them to a meaningful structure of underlying aptitudes. For each group, a solution was first obtained which satisfied the criteria of simple structure. Simple structure is essentially the factor analysis analogue of the doctrine of parsimony and is obtained in the rotational process by maximizing the number of zero loadings on as many factors as possible. This is equivalent to describing each test in a given battery in terms of a minimum number of common factors required to account for the intercorrelations of the battery as a whole.

It was discovered in each group that the first solutions had very nearly orthogonal simple structures. The factors in an orthogonal structure are entirely independent and uncorrelated; when the factors are correlated among themselves the structure is said to be oblique. Since the structures were very nearly orthogonal, and inasmuch as the solutions were not so exact that different investigators would have obtained identical correlations between the factors, it was decided to impose an orthogonal structure on each group and the rotational process was continued until this was achieved. An important advantage to the final solutions so obtained is that comparisons of the results are rendered less ambiguous, since reference can be made to factors which bear an identical relation to all other factors in each group.

Consistent results were obtained from the several correlational matrices, in that the factors common to a related group of tests could always be demonstrated regardless of the composition of the remainder of the experimental battery. The loadings of a factor on a test for different groups varied to about the same extent as correlations for identical pairs of tests in the different groups. The smallest number of common factors established in any group was seven, and the largest was ten. In all, 11 different common factors were found. They were named as follows:

G - Intelligence
V - Verbal Aptitude
N - Numerical Aptitude
S - Spatial Aptitude
P - Form Perception
Q - Clerical Perception
A - Aiming
T - Motor Speed
F - Finger Dexterity
M - Manual Dexterity
L - Logic

Table 2 shows the common factors identified for each group.

GATB TABLE 2

Common Factors Identified for Each Factor Analysis Group

Group	Factors										
0	G			S	P	Q	A	T	F	M	
1	G	V	N	S	P	Q	A	T	F	M	
2	G		N	S	P	Q	A	T	F	M	
3	G		N	S	P	Q		T	F	M	L
4	G		N	S	P	Q		T			L
5	G	V	N	S	P	Q	A	T	F	M	
6	G	V	N	S	P	Q	A	T	F	M	
7	G	V	N	S	P	Q	A	T	F	M	
8	G		N	S	P	Q	A	T			

Factor L (Logic) was found in only two of the nine factorial studies. This factor appears to be a narrow reasoning factor, since all of the four or five tests with significant projections on this factor in Groups 3 and 4 require the solution of problems by formal rational processes. It is possible that the reason why Factor L was not found in other factorial studies was that only one of the tests with substantial loadings on this factor in Groups 3 and 4 was administered to any of the other groups. In any case, since Factor L was tentatively found in only two of the nine studies, this factor could not be definitely established. Because the evidence supporting Factor L was not conclusive, no attempt was made to set up a test battery for measuring this factor.

Factor G presents difficulties in interpretation. This factor was found in each of the nine groups and is present in significant amount in about two dozen tests. Like all of the other factors, it is an independent first-order factor established in a position orthogonal to all the rest. The tests which have significant projections on this factor include all of the verbal tests, all of the numerical tests (except the two speed tests of one-digit arithmetic), and almost all of the spatial tests. Factor G was also present in a letter series test, a word memory test, and a perceptual relations test; this is interesting because none of these tests have significant projections on either V, N. or S. The USES Factor G appears to have some of the properties of Spearman's "g", but Spearman's theory that a single common factor of intelligence underlies the intercorrelations among psychological tests does not allow for group factors like those found in the USES studies. On the other hand, Factor G has a wider significance and is more persistent than the deductive or inductive reasoning factors found by Thurstone. Perhaps a more plausible hypothesis is that Factor G consists primarily of general reasoning ability, since it closely resembles the general reasoning factor found in studies conducted by the Army Air Forces in World War II. However, since Factor G possesses many of the properties that teachers, test examiners, and clinical psychologists would attribute to general intellectual ability, the factor was designated as "intelligence", (In the original report of the USES factor analysis studies, this factor was designated as Factor O).

Definitions of Aptitudes Measured in the GATB, B-1002

The nine aptitudes measured by B-1002 are defined below. The letter used as the symbol to identify each aptitude precedes each aptitude name. The part or parts of the GATB measuring each aptitude follow each definition.

Aptitude G - Intelligence
General learning ability. The ability to "catch on" or understand instructions and underlying principles; the ability to reason and make judgments. Closely related to doing well in school. Measured by Parts 3, 4, and 6.

Aptitude V - Verbal Aptitude
The ability to understand meaning of words and to use them effectively. The ability to comprehend language, to understand relationships between words and to understand meanings of whole sentences and paragraphs. Measured by Part 4.

Aptitude N - Numerical Aptitude
Ability to perform arithmetic operations quickly and accurately. Measured by Parts 2 and 6.

Aptitude S - Spatial Aptitude
Ability to think visually of geometric forms and to comprehend the two-dimensional representation of three-dimensional objects. The ability to recognize the relationships resulting from the movement of objects in space. Measured by Part 3.

Aptitude P - Form Perception
Ability to perceive pertinent detail in objects or in pictorial or graphic material. Ability to make visual comparisons and discriminations and see slight differences in shapes and shadings of figures and widths and lengths of lines. Measured by Parts 5 and 7.

Aptitude Q - Clerical Perception
Ability to perceive pertinent detail in verbal or tabular material. Ability to observe differences in copy, to proofread words and numbers, and to avoid perceptual errors in arithmetic computation. Measured by Part 1.

Aptitude K - Motor Coordination
Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed. Ability to make a movement response accurately and swiftly. Measured by Part 8.

Aptitude F - Finger Dexterity
Ability to move the fingers, and manipulate small objects with the fingers, rapidly or accurately. Measured by Parts 11 and 12.

Aptitude M - Manual Dexterity
Ability to move the hands easily and skillfully. Ability to work with the hands in placing and turning motions. Measured by Parts 9 and 10.

Validity Of The GATB For High School Success

A few studies have been conducted in which the relationships of the aptitudes of the GATB to high school success were determined. In most cases, the validity data to be summarized here were obtained incidentally in studies conducted primarily for other purposes. Procedures for selecting the sample, the number of times the sample was tested, and type of criteria used were not the same for the various studies. Since the experimental designs differed in these respects the results cannot be considered fully comparable. However, the studies appear to have enough common characteristics to permit some generalizations.

Samples - Characteristics of the samples in these studies are summarized in Table 86. This table shows the city and state in which tested, number of boys, girls, and total tested, grade (s) in which tested, and the edition of the GATB administered for each sample.

Sample 1 consists of students in 18 Minnesota high schools They were tested initially in Grade 10 during the 1948-49 school year and retested in Grade 12 during the 1950-51 school year. Of these students, 58 were also retested in Grade 11 during the 1949-50 school year. The test battery administered in each instance was the GATB, B-1001. The final sample (N=363) includes all those tested originally in Grade 10 (N=565) who could be retested in Grade 12, except for 10 students for whom criterion data were not available.

Sample 2 consists of students in four high schools (two suburban and two semi-rural) in Knox County, Tennessee. They were tested in Grade 12 with the GATB, B-1002 in the spring of 1957. The final sample (N=218) includes all students in Grade 12 classes (N=371) except those who indicated that they were definitely going to college or had a definite job offer and those for whom complete data were not available.

Sample 3 consists of students in the high school at Port Huron, Michigan. They were tested in Grade 12 with the GATB, B-1001, in the fall of 1948. The final sample (N=339) includes all Grade 12 students at school when the tests were administered.

Sample 4 also consists of students in the high school at Port Huron, Michigan. They were initially tested in Grade 9 in the fall of 1949, 1950, and 1951, respectively. The test battery administered in each instance was the GATB, B-1001. The final sample (N-312) includes all the students in Grade 9 at the time of initial testing (N-530) who could be retested in Grades 10, 11, and 12.

Sample 5 consists of students in the high school at Hagerstown, Maryland. They were tested in Grade 12 with the GATB, B-1002, in October 1952. The final sample (N-356) includes all Grade 12 students at school when the tests were administered.

Sample 6 also consists of students in the Hagerstown, Maryland school system. They were tested initially in Grade 9 in October 1952 and retested in Grade 12 in October 1955. The test battery administered in each instance was the GATB, B-1002. The final sample (N=307) includes all Grade 9 students in 1952 present at the time of initial testing (N-615) who could be retested in Grade 12.

Sample 7 consists of students in the high school at Nekoosa, Wisconsin. They were tested initially in Grade 9 in the spring of 1949 and retested in Grades 10, 11, and 12 in the spring of 1950, 1951, and 1952, respectively. The test battery administered in each instance was the GATB, B-1001. The final sample (N=44) includes all Grade 9 students in 1949 present at the time of the initial testing (N-61) who could be retested in Grades 10, 11, and 12.

GATB TABLE 86

Sample Number	City and State	Number			Grade				Edition
		Boys	Girls	Total	9	10	11	12	GATB
1	Seventeen cities in Minnesota	153	210	363		X	X	X	B-1001
2	Four cities in Knox County, Tenn.	109	109	218				X	B-1002
3	Port Huron, Michigan	144	195	339				X	B-1001
4	Port Huron, Michigan	137	175	312	X	X	X	X	B-1001
5	Hagerstown, Maryland	167	189	356				X	B-1002
6	Hagerstown, Maryland	141	166	307	X	X	X	X	B-1002
7	Nekoosa, Wisconsin	20	24	44	X	X	X	X	B-1001

Criteria of High School Success

A criterion of overall high school success was obtained for each of these samples. These criteria were all based on course grades obtained throughout the four-year high school program. For three samples the criterion was expressed in terms of final high school ranks; for the other four samples the criterion was expressed in terms of total grade point averages. For six of the samples the criterion was based on all courses taken in high school; for one sample the criterion was based on selected courses. Table 87 shows the type of criterion and courses on which the criterion was based for each sample.

GATB TABLE 87

Sample Number	Type of Criterion	Courses on which Criterion was based
1	Final high school rank	All courses taken in high school.
2	Grade point average	All courses taken in high school.
3	Grade point average	All courses taken in high school.
4	Grade point average	All courses taken in high school.
5	Final high school rank	All courses taken in high school.
6	Final high school rank	All courses taken in high school.
7	Grade point average	Courses taken by high proportion of students in sample.

Stability Of The GATB At Lower High School Grade Levels

Aptitude tests cannot be used with confidence unless there is evidence that the tests have substantial stability of measurement over a period of time. The term "stability of measurement" refers to the relationship between the initial test scores and retest scores of a specified group of individuals. It does not refer to amount of increase (or decrease) in level of scores over a period of time. Studies have shown that the aptitudes of the GATB do have a satisfactory degree of stability for adult groups when the interval between first and second administration of tests is three months or less. (See Chapter 15 of Section III of this Guide). But other studies on rates of aptitude maturation (Bayley; 1955, Bayley, 1957; Cornell & Armstrong, 1955; Dearborn & Rothney, 1941) have shown that there may be differences in the rate of progress of the maturation process for individuals who have not reached full aptitude maturity. A question arises as to whether individual differences in rate of maturation have a serious detrimental effect on stability of aptitude measurement in the lower high school grades. If this were the case, the test scores of younger high school students could not be expected to provide stable indications of occupational and educational potentialities. It would follow that use of aptitude tests for long-range counseling of students in the lower high school grades could not be justified. Evidence of the degree of long-term stability of the aptitudes of the GATB for students initially tested in the 9th grade and retested in the 12th grade are available from eight studies. Stability data are also available for a sample of students tested with the GATB twice in the 12th grade with an interval of three months between initial testing and retesting.

Samples - Characteristics of the samples are summarized in Table 91. This table shows the city and State in which tested, number of boys, girls, and total tested, and the edition of the GATB administered in Grade 9 and Grade 12 for each sample.

Sample 1 consists of students in the Sidney, Nebraska high high school. They were tested initially in Grades 10, 11, and 12 in December 1949, 1950, and 1951, respectively. The test battery administered in each instance was the GATB, B-1001. The final sample (N=42) includes all those tested originally in Grade 9 (N=77) who could be retested in Grades 10, 11, and 12.

Sample 2 consists of students in the Johnstown, Pennsylvania school system. They were tested initially in Grade 9 in April 1948 and retested in Grades 10, 11, and 12 in March 1949, February 1950, and February 1951, respectively. The test battery administered in each instance was the GATB, B-1001. The final sample (N=111) includes all those tested originally in Grade 9 (a random sample of 180 students from a potential sample of about 600 students) who could be retested in Grades 10, 11, and 12.

Sample 3 consists of students in the Lebanon Pennsylvania school system. They were tested initially in Grade 9 in February 1950 and retested in Grades 10, 11, and 12 in February 1951, 1952, and 1953, respectively. The test battery administered in each instance was the GATB, B-1001. The final sample (N=59) includes all those tested originally in Grade 9 (a random sample of 104 students) who could be retested in Grades 10, 11, and 12.

Sample 4 consists of students in the Port Huron, Michigan high school. They were tested initially in Grade 9 in the fall of 1948 and retested in Grades 10, 11, and 12 in the fall of 1949, 1950, and 1951, respectively. The test battery administered in each instance was the GATB, B-1001. The final sample (N-312) includes all the students in Grade 9 at the time of original testing (N-530) who could be retested in Grades 10, 11, 12.

Sample 5 consists of students in the Cleburne, Texas high school. They were tested initially in Grade 8 in the fall of 1950 and retested in Grades 9, 10, 11, and 12 in the fall of 1951, 1952, 1953, and 1954, respectively. The test battery administered in each instance was the GATB, B-1001. The final sample (N-114) includes all those tested originally in Grade 8 (M-252) who could be retested in Grades 9, 10, 11, and 12.

Sample 6 consists of students in the Hagerstown, Maryland school system. They were tested initially in Grade 9 in October 1952 and retested in Grade 12 in October 1955. The test battery administered in each instance was the GATB, B-1002. The final sample (N-307) includes all Grade 9 students in 1952 present at the time of initial testing (N=615) who could be retested in Grade 12.

Sample 7 consists of students in the Nekoosa, Wisconsin high school. They were tested initially in Grade 9 in the spring of 1949 and retested in Grades 10, 11, and 12 in the spring of 1950, 1951, and 1952 respectively. The test battery administered in each instance was the GATB, B-1001. The final sample (N=44) includes all Grade 9 students in 1949 present at the time of initial testing (N=61) who could be retested in Grades 10, 11, and 12.

Sample 8 consists of students in the New York City public school system. They were tested initially in Grade 9 in December 1951 and January 1952 and retested in Grade 12 in May and June 1955. The test battery administered in each instance was the GATB, B-1001. The final sample (N=111) includes all those tested originally in Grade 9 (N=1,224) who could be retested in Grade 12.

GATB TABLE 91

Sample Number	City and State	Number of Cases Boys	Girls	Total	Edition of GATB Grade 9	Grade 12
1	Sidney, Nebraska	18	24	42	B-1001	B-1001
2	Johnstown, Pennsylvania	53	58	111	B-1001	B-1001
3	Lebanon, Pennsylvania	33	26	59	B-1001	B-1001
4	Port Huron, Michigan	137	175	312	B-1001	B-1001
5	Cleburne, Texas	61	53	114	B-1001	B-1001
6	Hagerstown, Maryland	141	166	307	B-1002	B-1002
7	Nekoosa, Wisconsin	20	24	44	B-1001	B-1001
8	New York, New York	52	59=	111	B-1001	B-1001

Development Of Tentative GATB Norms for Grade 9 And Grade 10

GATB aptitude norms for specific occupations and OAP's have been developed through research with adult groups. These norms cannot be used without modification for students in the lower high school grades because of the effects of growth on aptitude scores during the high school years. There is good evidence that aptitude scores are still increasing during this period from studies on the GATB (Cook & Wrenn, 1950) and other tests (Bayley, 1957; Dearborn & Rothney, 1941; Thorndike, 1948; Wechsler, 1958). Since 1948 several GATB maturation studies have been conducted to determine the extent to which scores on the GATB increase during the high school years.

Choice of Experimental Design

Some of these studies utilized a test-retest type of experimental plan which involved testing students in one of the lower high school grades and then retesting them in the 12th grade. Other studies were done using an independent sample plan in which scores of students tested in the 12th grade were compared with scores of other students tested in the lower grades who eventually became 12th graders in the same school. Both designs require making assumptions which may not be entirely warranted, and there is considerable controversy as to which design is "best: (Bayley, 1955; Owens, 1956, pp. 155-157; Wechsler, 1958). The test-retest approach is the most appropriate when the results can be adjusted for the effects of practice. But sufficient data for estimating and partialing out practice effects on the GATB are not yet available. Therefore, it was decided that development of tentative norms for the 9th and 10th grades should be based on data from studies in which the independent sample design was used.

Data were available for 40 samples of students tested in 7 States. Each sample consisted of either boys or girls tested in either the 9th, 10th, or 12th grades and included only those students who eventually became 12th graders in the same school. The total number of students in the 40 samples was 5,922. To determine the effects of growth on aptitude scores during the high school years it was necessary to equate aptitude scores of students in 9th and 10th grade samples to aptitude scores of students in comparable 12th grade samples. Various statistical methods may be used to equate test scores of individuals in different groups. Flanagan (1950) believes that the equi-percentile method is the most satisfactory primarily because, unlike other methods, it does not make the assumption of similar shapes of the two score distributions and a linear relationship between the two series of scores. Flanagan's discussion is in terms of obtaining comparable scores for different tests or different forms of the same test, but the argument applies equally well (if not better) to the problem of obtaining comparable scores for two groups of students at different stages of the aptitude maturation process.

An assumption which must be made in independent sample studies is that there are no important differences between the samples with respect to factors which affect aptitude levels. This assumption cannot be justified unless dropouts from the samples are controlled. The dropout factor was controlled in all the independent sample studies by including in the lower grade samples only those who eventually became 12th graders in the same school. Thus, the lower grade samples and the Grade 12 samples were comparable in the sense that they both included only those students who eventually became 12th graders.

There are indications that, as a group, boys score relatively higher than girls on Spatial Aptitude and relatively lower than girls on Clerical Per ception. (see chapter 17 of section III of this guide). Sex differences have been found on these aptitudes in studies with high school students reported by the State Testing Staff of the Ohio State Employment Service (1949). Another study with high school students, conducted by Cook and Wrenn (1950), suggests that there may be sex differences in the level of performance on other aptitudes as well. A study with adults covering a wide age range also indicated sex differences on several aptitudes. (see chapter 18 of section III of this guide). In order to test the possibility that there may also be sex differences in aptitude maturation, the analysis of data was done separately for boys and girls.

The previous comments have been excerpted from: Guide to the Use of the General Aptitude Test Battery, Section III, Development; United States Department of Labor, Bureau of Employment Security, Washington, D.C. October 1962.

This guide and other materials are available to qualified users through the Superintendent of Documents, United States Government Printing Office, Washington, D. C. Qualified users are generally identified to the Superintendent of Documents by an accompanying letter from their state Employment Security Commission Test Unit,

APPENDIX B

MUSKEGON AREA SKILL TRAINING CENTER

COURSE OUTLINES

1965-66

Joseph M. Miller
Director

Fred S. Roys
Assistant Director

Counselors
Adele B. Jardine
John Dorris
Terry A. O'Connell

TRAINING COURSE OUTLINE - BASIC COMMUNICATIONS

Instructors: Edna L. Contrady, Delore P. Crane, Alice C. Hundley, James W. Price

1. General Objectives:

To educate trainees in the basic communication skills of reading, writing and speaking effectively. Trainees will be inventoried for basic communication skills and placed into homogeneous groupings, according to reading levels. The trainees will be taken from their level of attainment to the limit of their ability as time limitations permit.

2. Specific Objectives:

Reading:	Basic Understanding Comprehension Word Vocabulary
Language:	Correct use of words in sentences Writing sentences, paragraphs Understanding parts of speech Proof reading sentences Writing personal history Filling out a job application Writing a resume Punctuation
Spelling:	Spelling intelligently Simple rules of spelling
Speech:	Speaking correctly Speaking before groups

Total hours 140

TRAINING COURSE OUTLINE - BASIC COMPUTATIONS

Instructors: Fred S. Roys, Clark L. Twining

1. General Objectives:

To educate trainees in the manipulation and understanding of the number system. Trainees will be inventoried for basic computation skills, and placed into homogeneous groupings. The trainees will be taken from their level of attainment to the limit of their ability as time limitations permit.

2. Specific Objectives:

The trainees will develop skills by learning:

1. To use whole numbers
2. To use common fractions
3. To use decimals
4. To use percent
5. To use square and square root
6. To use measurement
7. To use formulas

Total hours 140

TRAINING COURSE OUTLINE - JOB ORIENTATION

Instructors: Kay G. Coleman, Virginia D. Dresen, Ada M. Jaeger, Bonnie M. VanRegemorter

1. General Ofjectives:

To make the trainees aware of basic job requirements of business and industry; their responsibilities to the employer; and the rewards possible from the world of work.

2. Specific Objectives:

A.	Personal hygiene	5
B.	Looking for a job	5
C.	Getting a job	5
D.	Why people sometimes fail to get a job	5
E.	Etiquette and human relations	5
F.	The interview	10
G.	Employers and employee relations	10
H.	Rounded education	5
I.	Human relations and job attitudes	5
J.	Getting along with the boss	5
K.	What employers want	10
	Total hours	70

TRAINING COURSE OUTLINE - PERSONAL HEALTH

Instructors: Virginia D. Dresen, Ada M. Jaeger

1. General Objectives:

To help trainees develop the ability to establish and maintain good personal health habits; to orient them to the nature and scope of personal health, and to cultivate those personal qualities that are important for successful employment.

2. Specific Objectives:

A.	Your personality	5
B.	The personality in trouble	10
C.	Control of your body	15
D.	Your Body in action	10
E.	The supply systems of your body	10
F.	Your protection against disease	15
G.	Safeguarding your body	5
	Total hours	70

TRAINING COURSE OUTLINE - AUTO BODY REPAIR

Instructor: Delbert E. Cornell

1. General Objectives:

   To train auto body repairmen in the basic fundamental and manipulative skills of special shop practice for auto body repair, oxygen-acetylene welding, hardware and trim, techniques of shaping metal, body panel repairs, refinishing, installation and care of upholstery and glass.

2. Manipulative skills:

		Hours
A.	Special shop practice for auto body repair 1. Special tools and equipment 2. Oxygen-acetylene welding 3. Arc Welding	25
B.	Hardware and trim 1. Glass channels and glass molding 2. Locks and controls 3. Body molding, bumpers and grill	25
C.	Techniques of shoping metal 1. Fundamental procedures 2. Hydraulic power units	100
D.	Body panel repairs 1. Straightening 2. Panel replacements 3. Body alignments	250
E.	Refinishing 1. Spray gun and power sander 2. Air supply 3. Protective coverings 4. The spray booth 5. Clips and fastening for chrone trim 6. Surface preparation 7. Undercoats 8. Color coats - decorative features	150
F.	Installation and care of upholstery 1. Basic procedures	25
G.	Installation and care of glass 1. Basic procedures	25
	Total hours	600

TRAINING COURSE OUTLINE - AUTOMOBILE SERVICE STATION MECHANICS

Instructors: Frederick B. Smith, S. Raymond Young

1. General Objectives:

To train service station mechanics in the basic fundamental and manipulative skills of fundamentals of the internal combustion engine, use of hand tools, the cooling systems, the lubricating system, the fuel system, the electrical system, harnessing energy, power train, front axel steering, frame, wheel syspension, wheels and tires, brakes and general repair of the automobile.

2. Manipulative Skills:

A.	Fundamentals of the internal combustion engine	80
B.	The cooling system	30
C.	The lubricating system	30
D.	The fuel system	40
E.	The electrical system	50
F.	Harnessing energy	50
G.	Power train	50
H.	Front axel, steering, frame, wheel suspension	50
I.	Wheels and tires	30
J.	Brakes	50
K.	General repair of automobile	140
	Total hours	600

TRAINING COURSE OUTLINE - CLERICAL OCCUPATIONS

Instructor: Kay G. Coleman

1. General Objectives:

To train recording and clerical personnel to handle general typing required on the job. Such typing activity involves business letters, tabulating, typing data in special spaces on a page, filling in forms, typing information on cards, typing from rough copies. In addition, practice in the routine operation of office machines, such as 10-key adding machine calculators, stenorette, full-key adding machines, comptometers and duplicating machines of various types.

Also, instruction in indexing, filing, recording, telephoning, receiving callers, attending the mail, and miscellaneous clerical duties. Formal instruction of acceptable office behavior and what is expected of a beginning worker.

A. Manipulative Skills

1.	General typing	200
2.	Filing and indexing	60
3.	Office practice	155
4.	Business machine	90
5.	Recording	40
6.	Business reference material	40
	Total hours	585

TRAINING COURSE OUTLINE - FOOD SERVICE OCCUPATIONS

Instructor: Bonnie M. Van Regemorter

1. General Objectives:

To train food service workers in the basic manipulative skills and the needed personality and subjective qualities necessary to assist in preparation and serve food under moderate supervision. This preparation would serve the workers in employment in restaurants, hospitals, nursing homes, institutions, school cafeterias, and other food-service positions.

2. Manipulative skills:

A.	Orientation to nature of the work and desirable personal qualities for job success	25
B.	Safe food handling, essential health practices and sanitation	50
C.	Care and use of equipment and safety requirements	50
D.	Basic skills in management of work and in preparation and service of food	450
E.	Adequate storage of food	25
	Total hours	600

TRAINING COURSE OUTLINE - HEALTH OCCUPATIONS*

Instructors: Virginia D. Dresen, Ada M. Jaeger

1. Course Objectives:

   A. To teach the trainee "Basic Nursing Skills" in preparation for employment as a "Nurse-Aid-Orderly"
   B. To teach the trainee on understanding and appreciation of the patient's total needs.
   C. To teach the trainee desirable conduct and rapport in a nursing situation
   D. To teach a foundation of the principles and techniques involved in basic nursing procedures and apply these in giving safe nursing care.
   E. To teach the trainee to observe and communicate basic indications of the body's reaction to disease and therapy.

2. Training Period:

Theory	80
Clinical Practice	80
Total hours	160

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* Training Program Supervised by Hackley Hospital

TRAINING COURSE OUTLINE - METAL MACHINE OPERATOR

Instructors: Theophilus Ohler, Richard A. Statz

1. General Objectives:

   To train machine tool operators in the basic manipulative skills of layout, benchwork, precision measurement, heat treatment and the set-up and operation of engine lathe, turret lathe, tracer lathe, drill press, vertical and horizontal milling machine, surface and cylindrical grinder, and boring machine. This will be supplemented with metalurgy, tooling theory, and shop safety, and other technical information that is pertinent to making a good machine tool operator.

2. Manipulative Skills:

A.	Benchwork	30
B.	Measurement and inspection	35
C.	Heat treatment	35
D.	Lathe work	215
E.	Drilling and boring	85
F.	Milling Machine	100
G.	Grinding	100
	Total hours	600

TRAINING COURSE OUTLINE - WELDING

Instructors: Lyman H. Gauld, Carl Prus

1. General Objectives:

   To train welders in the basic fundamentals and manipulative skills of oxyacetylene welding, arc welding, tig welding and mig welding.

2. Specific Objectives:

   In addition to the shopwork, the student will be required to complete certain assigned work related to combination welding course along with the related courses of communication for welders and computation for welders. Each student will be tested at regular intervals and a record kept of his individual progress. With reference to each type of machine the students will be taught:

   A. The proper care and maintenance of the machines
   B. Safety practices as they apply
   C. The different kinds of operations which can be performed with the machine
   D. The performance capabilities and limitation of the machine

3. Manipulative Skills:

   A. Oxyacetylene welding
   B. Arc welding
   C. Tig welding
   D. Mig welding

Total hours 1050

TRAINING COURSE OUTLINE - WOODWORKING MACHINE OPERATOR

Instructor: Herbert E. Mills

1. General Objective:

To train woodworking machine operators in the basic manipulations skills of layout, benchwork, measurement, circular saw, band saw, cut-off saw, jointer, woodlathe surfacer, and finishing. This will be supplemented with technical information relative to fasteners, preparing for finishing, shop safety, and other technical information that is pertinent to making a good woodworking machine operator.

2. Manipulative Skills:

A.	Layout	30
B.	Benchwork	35
C.	Measurement	30
D.	Circular Saw	100
E.	Band saw	80
F.	Cut-off saw	50
G.	Jointer	75
H.	Wood lathe	50
I.	Surfacer	75
J.	Finishing	75
	Total hours	600

APPENDIX C

STATISTICAL TABLES

1965-66

TABLE A

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental And Control Groups Comparison Before Training Period

	Experimental		Combined Control		Borderline Control		Pure Control	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	189	100%	89	100%	47	100%	42	100%
Males	112	59%	60	67%	30	64%	30	71%
Females	77	41%	29	33%	17	36%	12	29%
16 and 17	36	19%	20	22%	11	23%	9	21%
18 and 19	84	44%	42	47%	21	45%	21	50%
20 and 21	69	37%	27	31%	15	32%	12	29%
Single	148	78%	66	74%	36	77%	30	71%
Married	34	18%	22	25%	11	23%	11	26%
Separated Divorced Widowed	7	4%	1	1%	0	0%	1	2%
White	116	61%	60	57%	31	66%	29	69%
Non-White	73	39%	29	33%	16	34%	13	31%

TABLE A
(Continuation)

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental And Control Groups Comparison*
Before Training Period

	Experimental	Combined Control	Borderline Control	Pure Control
	n=189	n=89	n=47	n=42
Highest grade completed	9.4	9.2	9.3	9.2
Number of dependents (1.0 self only)	1.6	1.7	1.5	1.9
Percent unemployed over 5 weeks	58%	57%	64%	50%
Percent unskilled if employed during last 5 weeks	78%	84%	82%	86%
Full Scale I.Q. (WAIS)	92	92	92	92
Verbal I.Q. (WAIS)	93	92	92	92
Performance I.Q. (WAIS)	92	93	93	93
Reading Score (WRAT)	86	85	86	83
Spelling Score (WRAT)	79	78	80	76
Arithmetic Score (WRAT)	81	80	81	78
Average months in training	9	1	2	0

* All numbers are means unless otherwise indicated.

TABLE B

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Experimental Group Comparison Summary
General Aptitude Test Battery (GATB) *

Comparison Subgroups		GATB G		GATB V		GATB N		GATB S		GATB Q		GATB K		GATB F		GATB M	
	n=	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Boys	107	86.87	89.33	84.56	85.70	82.14	87.66	96.13	103.83	87.60	95.28	82.71	92.84	74.98	94.03	85.53	95.70
Girls	73	87.66	88.30	88.97	90.09	88.66	92.33	90.14	92.50	94.47	105.09	99.80	109.73	80.54	95.51	80.96	86.56
Age 16-17-18	76	87.80	87.71	86.47	86.56	84.29	88.08	93.61	97.91	89.55	98.95	87.02	94.72	72.93	92.67	80.97	93.71
Age 19-20-21	104	86.71	89.86	86.18	88.11	85.12	90.70	94.01	100.69	91.11	99.60	91.16	102.86	80.64	96.27	86.56	92.40
Lower Formal Education	109	82.81	84.61	82.91	84.71	78.49	83.62	91.46	96.43	85.90	94.95	84.40	94.05	75.33	92.76	84.05	94.45
Higher Formal Education	80	92.80	94.45	90.73	91.00	92.78	97.10	97.15	103.78	96.43	105.10	96.06	106.64	79.65	96.45	83.51	91.00
Reading Low Group	61	75.96	75.06	74.93	75.40	70.38	74.38	90.41	94.76	81.46	87.25	74.38	86.17	71.58	86.00	78.32	92.14
Reading High Group	59	97.58	100.82	97.45	99.65	94.27	99.24	101.08	107.37	97.79	109.55	96.76	107.03	82.67	96.64	96.92	97.26
Full Scale I.Q. Lower Group	60	73.92	72.81	74.77	78.22	72.39	75.14	81.96	81.83	82.20	89.50	79.87	94.32	62.92	78.30	70.45	80.16
Full Scale I.Q. High Group	66	99.57	101.54	96.22	95.25	93.88	98.57	107.00	114.22	96.51	107.97	93.93	101.96	84.39	97.96	93.14	101.18
Altitude I.Q. Lower Group	55	73.33	72.07	74.51	76.85	72.29	75.85	81.96	81.85	82.17	89.79	80.13	92.51	63.96	76.44	69.75	80.83
Altitude I.Q. Upper Group	59	99.30	102.16	96.48	96.32	93.25	97.29	105.03	112.34	97.19	107.19	93.79	104.10	85.91	100.91	95.34	104.56
Trainees No Dependents	129	85.17	86.07	85.47	86.84	82.22	86.51	90.97	96.00	89.36	97.80	87.47	98.33	73.21	91.03	79.29	88.56
Trainees With Dependents	50	92.80	96.60	88.69	89.03	92.62	98.45	101.25	108.25	94.20	102.40	95.50	102.95	86.82	102.69	96.15	105.73
White Trainees	116	88.35	89.67	86.31	87.21	85.60	89.75	96.38	102.72	90.65	99.25	85.47	94.67	76.30	91.10	83.73	95.43
Non-White Trainees	73	85.30	87.70	86.30	87.82	83.37	89.17	89.73	94.30	90.07	99.41	95.09	106.34	78.11	100.11	84.00	89.21
Program Graduates	122	86.19	88.79	85.41	86.55	84.55	89.78	92.45	100.18	90.54	99.46	91.01	100.85	77.60	96.98	84.53	93.53
Program Dropouts	67	92.35	89.58	91.00	92.11	85.76	88.23	101.47	95.82	89.82	98.52	79.42	90.78	72.63	77.00	78.50	89.30
Employed	124	87.05	90.07	85.62	86.88	84.53	91.07	93.59	101.00	90.67	99.13	87.93	99.44	79.57	95.95	87.64	95.57
Unemployed	64	87.47	86.52	87.76	88.61	85.20	86.32	94.41	96.17	89.91	99.70	92.87	99.62	71.21	91.46	76.34	88.06

* Also see pages 36-37 this report.

v. 12-62)

TABLE C

Period: 1965 EM Series: 1965 ND

ITEM	January	February	March	April	May	June	July	August	September	October	November	December	Monthly Average
I. TOTAL LABOR FORCE	53.9	53.9	54.0	54.4	55.3	56.8	57.0	57.2	57.2	56.9	57.4	58.1	56.0
II. AGRICULTURAL EMPLOYMENT	0.5	0.6	0.6	0.7	0.8	0.8	0.9	0.9	0.7	0.7	0.6	0.5	0.7
II. NON-FARM LABOR FORCE	53.4	53.3	53.4	53.7	54.5	56.0	56.1	56.3	56.5	56.2	56.8	57.6	55.3
IV. UNEMPLOYMENT	3.1	3.1	2.9	2.5	2.4	2.9	2.8	2.4	2.0	1.6	1.8	2.2	2.5
A. *Unemployment as % of total labor force*	5.8	5.8	5.4	4.6	4.3	5.1	4.9	4.2	3.5	2.8	3.1	3.8	4.5
V. WORKERS INVOLVED IN LABOR-MANAGEMENT DISPUTES	-	-	-	-	-	-	-	-	-	-	-	-	-
I. TOTAL NON-FARM EMPLOYMENT	50.3	50.2	50.5	51.2	52.1	53.1	53.3	53.9	54.5	54.6	55.0	55.4	52.8
A. Self-employment (including domestic)	5.4	5.3	5.3	5.3	5.5	5.6	5.7	5.6	5.5	5.5	5.5	5.5	5.4
B. WAGE AND SALARY WORKERS	44.9	44.9	45.2	45.9	46.6	47.5	47.6	48.3	49.0	49.1	49.5	49.9	47.4
1. MANUFACTURING INDUSTRIES	24.4	24.7	25.0	25.1	25.4	26.0	25.9	26.4	27.0	26.9	27.1	27.3	25.9
a. Durable goods industries	21.2	21.4	21.7	21.9	22.1	22.7	22.6	23.1	23.7	23.7	23.8	24.1	22.7
(1) Lumber and wood products (24)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
(2) Furniture and fixtures (25)	A/	A/	A/	A/	A/	A/	A/	A/	A/	A/	A/	A/	A/
(3) Metal industries	7.4	7.4	7.6	7.7	7.8	8.0	7.8	8.0	8.1	8.1	8.2	8.4	7.9
(a) Primary metal products (33)	6.5	6.6	6.7	6.8	6.9	7.1	6.8	7.1	7.1	7.1	7.3	7.4	6.9
(b) Fabricated metal products (34)	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	0.9
(4) Machinery (non-electrical) (35)	6.3	6.4	6.4	6.3	6.3	6.4	6.5	6.7	6.9	6.9	7.0	7.2	6.6
(5) Electrical machinery (36)	-	-	-	-	-	-	-	-	-	-	-	-	-
(6) Transportation equipment	4.1	4.2	4.3	4.4	4.6	4.8	4.8	4.8	5.0	5.0	5.0	4.9	4.7
(a) Motor vehicles and equipment (371)	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
(b) Other trans., equip. (372-375, 379)	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
(7) Other durable goods (19, 32, 38, 39)	3.3	3.2	3.4	3.3	3.3	3.4	3.5	3.5	3.6	3.6	3.5	3.5	3.5
(a)													
b. Non-durable goods industries	3.2	3.3	3.3	3.3	3.2	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
(1) Food and kindred products (20)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
(2) Textile mill products & apparel (22,23)	-	-	-	-	-	-	-	-	-	-	-	-	-
(3) Paper and allied products (26)	B/	B/	B/	B/	B/	B/	B/	B/	B/	B/	B/	B/	B/
(4) Printing, publishing & allied (27)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
(5) Chemicals, petroleum & related (28,29)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.1
(6) Other non-durable goods (21,30, 31)	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5
(a)													
2. NON-MANUFACTURING INDUSTRIES	15.8	15.7	15.8	16.4	16.8	17.1	17.4	17.6	17.4	17.8	17.9	17.8	16.9
a. Construction (15-17)	1.2	1.2	1.2	1.4	1.5	1.7	1.7	1.7	1.7	1.7	1.8	1.5	1.5
b. Trans., commun., & utilities (40-49)	2.2	2.2	2.3	2.3	2.4	2.5	2.5	2.6	2.5	2.5	2.4	2.4	2.4
c. Wholesale trade (50)	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
d. Retail trade (52-59)	5.4	5.3	5.4	5.7	5.7	5.8	6.0	5.9	6.0	6.1	6.1	6.4	5.8
e. Finance, real estate & insurance (60-67)	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3
f. Service (70-89)	4.3	4.4	4.3	4.3	4.4	4.4	4.5	4.5	4.4	4.7	4.7	4.7	4.5
g. Mining (10-14)													
(1)													
3. GOVERNMENT	4.6	4.5	4.4	4.4	4.4	4.4	4.3	4.3	4.5	4.4	4.5	4.7	4.5
a. Federal	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3
b. State	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
c. Local	4.2	4.1	4.0	4.0	4.0	4.0	3.8	3.9	4.1	4.0	4.1	4.2	4.0

* *Asterisk indicates that a labor-management dispute involving more than 100 workers exists in that industry.*

A/ Employment included in other durable goods to avoid disclosure. B/ Employment included in other non-durable goods to avoid disclosure.

MESC 32.
(REV. 1½

TABLE D

LABOR FORCE AND EMPLOYMENT ESTIMATES

Area: MUSKEGON - MUSKEGON HEIGHTS
Period: 1966
BM Series: 3/65 ND

ITEM	January	February	March	April	May	June	July	August	September	October	November	December	Monthly Average
I. TOTAL LABOR FORCE	56,600	56,800	56,700	57,300	57,700	59,500	59,500	59,300	58,800	58,600	59,300	59,600	58,300
II. AGRICULTURAL EMPLOYMENT	500	600	600	700	700	800	800	800	700	600	600	500	600
III. NON-FARM LABOR FORCE	56,100	56,200	56,100	56,600	57,000	58,700	58,700	58,500	58,100	58,000	58,700	59,100	57,700
IV. UNEMPLOYMENT	2,000	2,200	2,100	2,000	2,100	2,800	3,000	2,500	1,900	1,500	1,900	1,900	2,200
A. *Unemployment as % of total labor force*	3.5	3.9	3.7	3.5	3.6	4.7	5.0	4.2	3.2	2.6	3.2	3.2	3.8
V. WORKERS INVOLVED IN LABOR-MANAGEMENT DISPUTES	-	-	-	-	200	-	-	-	-	-	-	-	-
VI. TOTAL NON-FARM EMPLOYMENT	54,100	54,000	54,000	54,600	54,700	55,900	55,700	56,000	56,200	56,500	56,800	57,200	55,500
A. Self-employment (including domestic)	5,500	5,400	5,300	5,300	5,400	5,500	5,500	5,500	5,500	5,400	5,300	5,300	5,400
B. WAGE AND SALARY WORKERS	48,600	48,600	48,700	49,300	49,300	50,400	50,200	50,500	50,700	51,100	51,500	51,900	50,100
1. MANUFACTURING INDUSTRIES	27,200	27,400	27,600	27,600	27,700	28,200	28,100	28,400	28,500	28,700	28,800	29,000	28,100
a. Durable goods industries	24,000	24,100	24,300	24,400	24,500	24,900	24,900	25,100	25,200	25,300	25,500	25,700	24,800
(1) Lumber and wood products (24)	100	100	100	100	100	100	100	100	100	100	100	100	100
(2) Furniture and fixtures (25)	A/	A/	A/	A/	A/	A/	A/	A/	A/	A/	A/	A/	A'
- (3) Metal industries	8,300	8,400	8,500	8,500	8,600	8,800	8,700	8,700	8,800	9,000	9,200	9,300	8,700
(a) Primary metal products (33)	7,300	7,400	7,400	7,500	7,600	7,800	7,700	7,700	7,800	7,900	8,100	8,200	7,700
(b) Fabricated metal products (34)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,100	1,100	1,000
- (4) Machinery (non-electrical) (35)	7,200	7,200	7,300	7,300	7,300	7,500	7,500	7,700	7,800	7,700	7,800	7,800	7,500
(5) Electrical machinery (36)	-	-	-	-	-	-	-	-	-	-	-	-	-
- (6) Transportation equipment	4,900	4,800	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,800	4,900	4,900
(a) Motor vehicles and equipment (371)	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
(b) Other trans., equip. (372-375, 379)	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
(7) Other durable goods (19, 32, 38, 39)	3,500	3,500	3,600	3,600	3,600	3,600	3,600	3,700	3,600	3,600	3,600	3,700	3,600
(a)													
b. Non-durable goods industries	3,200	3,300	3,300	3,200	3,200	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300
(1) Food and kindred products (20)	500	500	500	400	400	500	500	500	500	500	500	500	500
(2) Textile mill products & apparel (22,23)	-	-	-	-	-	-	-	-	-	-	-	-	-
(3) Paper and allied products (26)	B/	B/	B/	B/	B/	B/	B/	B/	B/	B/	B/	B/	B/
(4) Printing, publishing & allied (27)	300	300	300	300	300	300	300	300	300	300	300	300	300
(5) Chemicals, petroleum & related (28,29)	1,000	1,100	1,000	1,100	1,000	1,100	1,100	1,100	1,000	1,000	1,000	1,000	1,000
(6) Other non-durable goods (21,30, 31)	1,400	1,500	1,500	1,500	1,500	1,500	1,400	1,500	1,500	1,500	1,500	1,500	1,500
(a)													
2. NON-MANUFACTURING INDUSTRIES	16,800	16,700	16,500	17,100	17,000	17,600	17,600	17,700	17,600	17,800	17,900	18,100	17,400
a. Construction (15-17)	1,400	1,400	1,500	1,700	1,500*	1,800	1,800	1,900	1,800	1,700	1,800	1,800	1,700
b. Trans., commun., & utilities (40-49)	2,300	2,300	2,200	2,200	2,200	2,300	2,300	2,400	2,300	2,400	2,400	2,300	2,300
c. Wholesale trade (50)	1,500	1,500	1,500	1,600	1,500	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
d. Retail trade (52-59)	5,500	5,600	5,500	5,900	5,900	6,000	5,900	5,900	5,900	6,200	6,200	6,400	5,900
e. Finance, real estate & insurance (60-67)	1,300	1,200	1,200	1,200	1,200	1,200	1,200	1,300	1,200	1,200	1,200	1,200	1,200
f. Service (70-89)	4,700	4,700	4,600	4,600	4,700	4,700	4,800	4,700	4,700	4,700	4,700	4,700	4,700
g. Mining (10-14)													
(1)													
3. GOVERNMENT	4,600	4,500	4,600	4,500	4,500	4,700	4,400	4,400	4,600	4,600	4,800	4,800	4,600
a. Federal	300	300	300	300	300	300	300	300	300	300	300	400	300
b. State	200	200	200	200	200	200	200	200	200	200	200	200	200
c. Local	4,100	4,100	4,100	4,100	4,100	4,300	4,000	4,000	4,200	4,200	4,400	4,300	4,100

* *Asterisk indicates that a labor-management dispute involving more than 100 workers exists in that industry.*

A/ Employment included in other durable goods to avoid disclosure. B/ Employment included in other non-durable goods to avoid disclosure.

TABLE E

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Selective Service System Statistics
Local Board No. 63
Muskegon, Michigan

Enlistments	1965	1966	Inductions	1965	1966
January	30	41	January	8	55
February	25	24	February	0	24
March	22	67	March	4	59
April	19	28	April	19	7
May	11	36	May	7	26
June	29	36	June	19	19
July	39	90	July	32	30
August	32	71	August	2	47
September	49	73	September	20	22
October	39	41	October	23	36
November	37	39	November	31	65
December	12	30	December	46	0
Totals*	344	576	Totals*	211	390

* Grand Total 1521 - this is not a constant figure, however, because men undoubtedly were returning to the community from the armed services but the number of returnees is unknown.

TABLE F

Experimental Group Males I.Q. Changes

Trainee Number	1st Full I.Q.	2nd Full I.Q.	Full I.Q. Change + or -	1st Verbal I.Q.	2nd Verbal I.Q.	Verbal I.Q. Change + or -	1st Performance I.Q.	2nd Performance I.Q.	Performance I.Q. Change + or -	1st Altitude I.Q.	2nd Altitude I.Q.	Altitude I.Q. Change + or -
1	123	125	+ 2	117	118	+ 1	127	131	+ 4	126	131	+ 5
2	122	134	+12	123	129	+ 6	117	136	+19	132	139	+ 7
3	118	121	+ 3	119	119	0	115	120	+ 5	125	127	+ 2
4	115	116	+ 1	119	116	- 3	108	114	+ 6	125	126	+ 1
5	114	114	0	114	110	- 4	112	117	+ 5	118	121	+ 3
6	112	120	+ 8	116	121	+ 5	104	116	+12	121	123	+ 2
7	111	114	+ 3	106	110	+ 4	115	116	+ 1	116	122	+ 6
8	110	114	+ 4	105	110	+ 5	116	119	+ 3	120	121	+ 1
9	110	110	0	107	103	- 4	112	118	+ 6	112	112	0
10	109	111	+ 2	112	105	- 7	105	118	+13	119	120	+ 1
11	109	109	0	115	114	- 1	99	100	+ 1	114	115	+ 1
12	109	108	- 1	113	110	- 3	102	105	+ 3	114	119	+ 5
13	107	111	+ 4	106	108	+ 2	107	115	+ 8	112	116	+ 4
14	106	105	- 1	107	105	- 2	104	103	- 1	114	113	- 1
15	105	111	+ 6	110	115	+ 5	97	104	+ 7	108	125	+17
16	105	104	- 1	110	104	- 6	98	102	+ 4	132	112	-20
17	103	108	+ 5	102	109	+ 7	104	107	+ 3	115	110	- 5
18	103	96	- 7	107	92	-15	98	102	+ 4	111	100	-11
19	103	96	- 7	101	96	- 5	105	97	- 8	108	100	- 8
20	102	112	+10	101	106	+ 5	104	117	+13	115	117	+ 2
21	102	109	+ 7	107	116	+ 9	94	99	+ 5	121	121	0
22	102	105	+ 3	94	93	- 1	111	120	+ 9	116	116	0
23	101	114	+13	102	113	+11	99	115	+ 6	103	121	+18
24	101	108	+ 7	98	103	+ 5	106	114	+ 8	107	113	+ 6
25	101	106	+ 5	97	95	- 2	106	120	+14	110	117	+ 7
26	101	105	+ 4	105	106	+ 1	96	103	+ 7	105	115	+10
27	101	102	+ 1	107	109	+ 2	94	93	- 1	108	115	+ 7
28	100	106	+ 6	96	96	0	106	120	+14	104	112	+ 8
29	100	105	+ 5	101	102	+ 1	98	109	+11	112	109	- 3
30	100	102	+ 2	99	97	- 2	102	110	+ 8	103	108	+ 5
31	100	102	+ 2	102	104	+ 2	98	99	+ 1	107	108	+ 1
32	100	97	- 3	99	90	- 9	102	107	+ 5	104	103	- 1
33	99	106	+ 7	100	106	+ 6	99	106	+ 7	103	112	+ 9
34	99	105	+ 6	106	106	0	95	103	+ 8	105	119	+14
35	99	104	+ 5	105	107	+ 2	90	98	+ 8	107	108	+ 1

Number	F.S.I.Q.	F.S.I.Q.	+ or -	V.I.Q.	V.I.Q.	+ or -	P.I.Q.	P.I.Q.	+ or -	A.I.Q.	A.I.Q.	+ or -
36	99	101	+ 3	106	105	- 1	90	95	+ 5	118	107	-11
37	99	95	- 4	95	85	-10	104	110	+ 6	106	104	- 2
38	98	106	+ 8	98	104	+ 6	99	107	+ 8	104	115	+11
39	98	104	+ 6	106	108	+ 2	88	99	+11	101	110	+ 9
40	98	99	+ 1	99	96	- 3	97	103	+ 6	105	100	- 5
41	97	104	+ 7	96	102	+ 6	99	107	+ 8	101	112	+11
42	97	104	+ 7	101	100	- 1	92	110	+18	107	125	+18
43	97	97	0	98	98	0	95	97	+ 2	102	105	+ 3
44	96	108	+12	105	115	+10	85	97	+12	106	121	+15
45	96	102	+ 6	91	92	+ 1	104	115	+11	111	125	+14
46	96	98	+ 2	103	106	+ 3	86	88	+ 2	101	100	- 1
47	96	96	0	93	86	- 7	102	110	+ 8	103	108	+ 5
48	95	103	+ 8	93	95	+ 2	98	114	+ 6	102	108	+ 6
49	95	101	+ 6	99	104	+ 3	90	97	+ 7	99	111	+12
50	94	102	+ 8	94	102	+ 8	94	102	+ 8	103	109	+ 6
51	94	99	+ 5	91	98	+ 7	99	100	+ 1	100	100	0
52	94	95	+ 1	86	85	- 1	105	110	+ 5	103	116	+13
53	94	91	- 3	90	88	- 2	99	96	- 3	95	101	+ 6
54	93	102	+ 9	92	100	+ 8	97	104	+ 7	113	113	0
55	93	98	+ 5	96	99	+ 3	90	97	+ 7	101	110	+ 9
56	93	98	+ 5	93	95	+ 2	94	103	+ 9	100	103	+ 3
57	93	93	0	93	94	+ 1	95	94	- 1	103	103	0
58	93	89	- 4	96	93	- 3	89	86	- 3	99	97	- 2
59	92	104	+12	98	105	+ 7	85	103	+18	97	112	+15
60	92	92	0	88	87	- 1	99	99	0	97	99	+ 2
61	92	92	0	88	86	- 2	99	102	+ 3	96	100	+ 4
62	91	97	+ 6	91	96	+ 5	93	99	+ 6	96	108	+12
63	91	97	+ 6	86	89	+ 3	98	109	+11	96	103	+ 7
64	91	95	+ 4	85	89	+ 4	100	105	+ 5	109	106	- 3
65	91	88	- 3	85	74	-11	101	107	+ 6	95	104	+19
66	91	86	- 5	90	83	- 7	94	92	- 2	94	89	- 5
67	90	98	+ 8	87	92	+ 5	96	107	+11	100	107	+ 7
68	90	96	+ 6	90	95	+ 5	91	98	+ 7	99	99	0
69	90	95	+ 5	84	84	0	99	111	+12	95	106	+11
70	90	93	+ 3	85	89	+ 4	99	99	0	92	96	+ 4
71	89	104	+15	92	104	+12	88	103	+15	101	132	+31
72	89	101	+12	90	104	+14	90	95	+ 5	96	107	+11
73	89	98	+ 9	93	98	+ 5	85	99	+14	95	109	+14
74	89	93	+ 4	85	88	+ 3	97	100	+ 3	95	98	+ 3
75	88	100	+12	97	111	+ 4	79	85	+ 6	103	114	+11
76	88	95	+ 7	85	93	+ 8	93	99	+ 6	93	103	+10
77	88	94	+ 6	93	97	+ 4	85	91	+ 6	95	100	+ 5
78	88	92	+ 4	81	90	+ 9	99	97	- 2	94	97	+ 3
79	87	88	+ 1	85	85	0	91	94	+ 3	89	90	+ 1

Trainee Number	1st F.S.I.Q.	2nd F.S.I.Q.	Change + or -	1st V.I.Q.	2nd V.I.Q.	Change + or -	1st 2 P.I.Q.	2nd P.I.Q.	Change + or -	1st A.I.Q.	2nd A.I.Q.	Change + or -
80	86	88	+ 2	78	84	+ 6	98	94	- 4	116	90	-26
81	85	93	+ 8	81	89	+ 8	93	99	+ 6	91	100	+ 9
82	85	89	+ 4	82	88	+ 6	92	93	+ 1	89	94	+ 5
83	85	88	+ 3	83	84	+ 1	90	96	+ 6	93	93	0
84	85	86	+ 1	84	82	- 2	89	93	+ 4	95	91	- 4
85	84	95	+11	86	93	+ 7	85	99	+14	92	99	+ 7
86	84	86	+ 2	88	88	0	81	85	+ 4	94	92	- 2
87	84	85	+ 1	87	86	- 1	83	86	+ 3	90	89	- 1
88	83	90	+ 7	72	78	+ 6	99	108	+ 9	96	109	+13
89	82	87	+ 5	78	80	+ 2	90	98	+ 8	93	97	+ 4
90	81	94	+13	90	101	+11	72	86	+14	86	100	+14
91	81	92	+11	78	92	+14	86	93	+ 7	85	96	+11
92	80	85	+ 5	86	88	+ 2	74	82	+ 8	86	91	+ 5
93	80	84	+ 4	72	75	+ 3	94	99	+ 5	91	95	+ 4
94	80	83	+ 3	80	80	0	82	89	+ 7	83	89	+ 6
95	80	82	+ 2	86	84	- 2	74	82	+ 8	95	91	- 4
96	79	91	+12	81	93	+12	78	90	+12	93	97	+ 4
97	78	84	+ 6	81	81	0	76	90	+14	89	88	- 1
98	78	84	+ 6	78	82	+ 4	81	89	+ 8	91	94	+ 3
99	77	87	+10	85	90	+ 5	69	85	+16	79	92	+13
100	76	82	+ 6	72	78	+ 6	83	90	+ 7	84	87	+ 3
101	75	89	+14	73	84	+11	81	97	+16	80	93	+13
102	75	82	+ 7	77	84	+ 7	75	81	+ 6	78	82	+ 4
103	73	81	+ 8	78	81	+ 3	70	85	+15	80	87	+ 7
104	73	77	+ 4	72	73	+ 1	73	85	+12	76	81	+ 5
105	72	78	+ 6	83	87	+ 4	62	69	+ 7	82	83	+ 1
106	69	83	+14	77	91	+14	63	76	+13	79	90	+11
107	52	48	- 4	54	56	+ 2	55	44	-11	65	57	- 8

TABLE G

Experimental Group Females I.Q. Changes

Trainee Number	1st Full I.Q.	2nd Full I.Q.	Full I.Q. Change + or -	1st Verbal I.Q.	2nd Verbal I.Q.	Verbal I.Q. Change + or -	1st Performance I.Q.	2nd Performance I.Q.	Performance I.Q. + or -	1st Altitude	2nd Altitude	Altitude I.Q. + or -
1	131	135	+ 4	137	133	- 4	119	133	+14	137	141	+ 4
2	111	117	+ 6	113	113	0	107	119	+12	122	126	+ 4
3	111	112	+ 1	104	106	+ 2	119	119	0	115	121	+ 6
4	109	112	+ 3	115	116	+ 1	100	104	+ 4	115	117	+ 2
5	109	112	+ 3	105	110	+ 5	114	114	0	114	124	+10
6	108	116	+ 8	105	104	- 1	111	130	+19	113	125	+12
7	108	109	+ 1	115	111	- 4	97	106	+ 9	122	113	- 9
8	106	114	+ 8	109	110	+ 1	100	116	+16	115	123	+ 8
9	106	109	+ 3	102	101	- 1	109	119	+10	108	123	+15
10	105	127	+22	111	129	+18	97	120	+23	110	134	+24
11	104	110	+ 6	102	112	+10	106	107	+ 1	107	122	+15
12	104	109	+ 5	108	112	+ 4	98	104	+ 6	110	121	+11
13	104	108	+ 4	100	105	+ 5	109	113	+ 4	110	116	+ 6
14	103	107	+ 4	108	113	+ 5	97	99	+ 2	110	113	+ 3
15	103	104	+ 1	102	103	+ 1	103	105	+ 2	113	107	- 6
16	103	104	+ 1	105	105	0	101	103	+ 2	107	111	+ 4
17	103	104	+ 1	102	101	- 1	105	109	+ 4	111	110	- 1
18	101	110	+ 9	104	107	+ 3	97	114	+17	108	114	+ 6
19	101	106	+ 5	102	101	- 1	101	113	+12	107	110	+ 3
20	100	107	+ 7	100	105	+ 5	101	110	+ 9	110	140	+30
21	100	101	+ 1	99	99	0	102	105	+ 3	104	107	+ 3
22	99	108	+ 9	103	114	+11	94	98	+ 4	110	140	+30
23	99	107	+ 8	100	109	+ 9	96	105	+ 9	102	121	+19
24	98	103	+ 5	100	102	+ 2	96	103	+ 7	101	109	+ 8
25	97	101	+ 4	103	105	+ 2	89	94	+ 6	106	112	+ 6
26	96	102	+ 6	97	99	+ 2	95	106	+11	105	111	+ 6
27	95	106	+11	98	110	+12	92	99	+ 7	103	125	+22
28	95	105	+10	95	106	+11	97	103	+ 6	101	120	+19
29	95	102	+ 7	98	98	0	91	107	+16	100	107	+ 7
30	95	99	+ 4	95	98	+ 3	95	101	+ 6	99	107	+ 8
31	94	108	+14	100	102	+ 2	87	112	+25	95	115	+20
32	94	94	0	88	86	- 2	102	106	+ 4	100	99	- 1
33	93	94	+ 1	90	90	0	98	99	+ 1	110	99	-11
34	92	102	+10	97	105	+ 8	87	98	+11	99	109	+10
35	92	94	+ 2	92	86	- 6	96	106	+10	100	108	+ 8
36	92	88	- 6	99	90	- 9	84	88	+ 4	96	93	- 3

Trainee Number	1st F.S.I.Q.	2nd F.S.I.Q.	Change + or -	1st V.I.Q.	2nd V.I.Q	Change + or -	1st P.I.Q.	2nd P.I.Q.	Change + or -	1st A.I.Q.	2nd A.I.Q.	Change + or -
37	91	95	+ 4	92	96	+ 4	91	94	+ 3	99	102	+ 3
38	90	99	+ 9	91	95	+ 4	90	104	+14	95	105	+10
39	90	96	+ 6	89	97	+ 8	93	96	+ 3	100	103	+ 3
40	89	92	+ 3	93	96	+ 3	85	88	+ 3	93	98	+ 5
41	88	96	+ 8	92	99	+ 7	86	94	+ 8	97	99	+ 2
42	88	89	+ 1	87	89	+ 2	91	91	0	96	93	- 3
43	87	102	+15	85	99	+14	93	106	+13	98	111	+13
44	87	98	+11	88	97	+ 9	87	99	+12	93	107	+14
45	86	101	+15	89	99	+10	85	103	+18	92	102	+10
46	86	90	+ 4	89	91	+ 2	84	90	+ 6	100	92	- 8
47	86	86	0	92	88	- 4	80	85	+ 5	92	92	0
48	85	98	+13	83	100	+13	90	97	+ 7	90	99	+ 9
49	85	92	+ 7	88	94	+ 6	91	91	0	88	102	+14
50	85	89	+ 4	85	87	+ 2	86	93	+ 7	90	103	+13
51	85	89	+ 4	88	86	- 2	84	89	+ 5	95	96	+ 1
52	84	89	+ 5	84	85	+ 1	86	97	+11	92	95	+ 3
53	83	84	+ 1	84	84	0	84	87	+ 3	86	90	+ 4
54	82	89	+ 7	81	91	+10	86	89	+ 3	91	95	+ 4
55	81	88	+ 7	90	95	+ 5	72	81	+ 9	84	97	+13
56	81	84	+ 3	80	80	0	85	93	+ 8	92	92	0
57	81	90	+ 9	86	94	+ 8	77	86	+ 9	85	104	+19
58	80	83	+ 3	86	86	0	75	82	+ 7	89	91	+ 2
59	80	87	+ 7	81	87	+ 6	81	84	+ 3	88	98	+10
60	80	92	+12	79	92	+13	84	93	+ 9	86	95	+ 9
61	79	86	+ 7	79	91	+12	82	89	+ 7	95	91	- 4
62	78	79	+ 1	81	81	0	77	80	+ 3	83	88	+ 5
63	78	81	+ 3	79	80	+ 1	80	86	+ 6	94	91	- 3
64	76	81	+ 5	79	82	+ 3	74	83	+ 9	90	92	+ 2
65	76	94	+18	82	96	+14	71	93	+22	80	101	+21
66	76	84	+ 8	79	84	+ 5	76	86	+10	90	89	- 1
67	76	76	0	81	77	- 4	72	77	+ 5	79	82	+ 3
68	75	77	+ 2	78	83	+ 5	73	72	- 1	83	83	0
69	72	89	+17	75	90	+15	72	90	+18	81	90	+ 9
70	72	84	+12	72	84	+12	76	85	+ 9	98	113	+15
71	65	73	+ 8	67	76	+ 9	66	73	+ 7	69	82	+13
72	63	65	+ 2	73	70	- 3	54	64	+10	66	77	+11
73	61	71	+10	62	66	+ 4	64	81	+17	65	75	+10

TABLE H

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Males--Pre Data Jastak RHO Categories By Mean Scores

	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
	n=38	n=61	n=23	n=5	n=8	n=24
Information	6.65	7.73	8,08	9.60	9.75	8.12
Comprehension	8.60	9.63	10,34	11.00	11.62	8.20
Arithmetic	7.73	7.47	6.95	10.40	8.00	8.66
Similarities	8.60	8.54	9,21	10.80	9.25	8,45
Digit Span	8.50	7.77	6,78	7.60	8.50	11.45
Vocabulary	6.86	8.22	8,91	10.40	9.62	7.70
Digit Symbol	9.42	7.52	8.47	7,40	6.87	7.75
Picture Completion	8.60	10.09	9.60	9.40	8.12	9.04
Block Design	9.63	10.65	8.43	9.60	6.42	9.29
Picture Arrangement	8.15	9.60	7,78	8.80	7,62	9.75
Object Assembly	9.23	10.68	7,52	9.60	7.12	7.83
Language	94.76	92.67	109.26	111.60	107.87	98.00
Reality	108.23	114.34	105,17	95.60	83.75	100.66
Motivation	101.68	89.09	92.04	102.80	93.25	110.66
Psychomotor	114.63	96.67	107.95	91.60	89.25	98.20
Affect	96.39	97.57	102,65	99.20	102.87	103.83
Elation	98.13	98.00	109.95	101.00	103.00	99.00
Depression	94.57	97.09	94,65	97.60	102.75	108.62
Judgement	102.63	104.50	100.56	103.00	110.00	94,54
Reasoning	96.65	100.22	97.78	104.00	97.50	97.95
Average Wage	1.39 n=21	1.42 n=36	1.62 n=15	.88 n=3	1.35 n=5	1.30 n=7

TABLE I

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Males--Post Data Jastak RHO Categories By Mean Scores

	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
	n=59	n=68	n=16	n=8	n=3	n=7
Information	7.71	7.94	8.87	8.50	9.33	10.14
Comprehension	11.32	9.88	11.18	10.37	10.33	11.85
Arithmetic	8.79	7.66	8.18	9.62	11.33	8.42
Similarities	10.03	9.35	10.75	10.00	11.33	11.00
Digit Span	9.00	7.88	7.37	10.75	9.00	8.71
Vocabulary	7.61	8.75	9.50	8.62	11.00	10.14
Digit Symbol	10.29	8.52	9.81	8.62	9.33	8.14
Picture Completion	9.86	10.85	10.12	9.37	9.66	10.57
Block Design	9.98	11.32	9.62	9.50	13.00	7.42
Picture Arrangement	9.50	10.58	9.87	10.12	10.33	8.14
Object Assembly	11.03	11.89	8.93	9.87	12.00	8.57
Language	93.16	91.33	103.12	105.62	113.00	114.14
Reality	108.72	115.30	105.93	104.87	115.00	92.42
Motivation	99.98	89.10	90.50	112.12	112.33	97.85
Psychomotor	111.44	96.94	110.00	99.25	108.66	93.42
Affect	97.64	98.57	102.18	102.37	93.33	100.71
Elation	98.86	98.36	102.75	99.75	89.66	109.85
Depression	96.67	98.92	101.81	105.12	97.00	91.85
Judgement	103.18	103.98	98.93	99.87	98.33	109.85
Reasoning	95.16	99.25	98.75	97.87	101.66	97.14
Average Wage	2.06 n=47	2.01 n=51	1.96 n=12	2.03 n=7	1.36 n=3	1.99 n=4

TABLE J

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Females--Pre Data Jastak RHO Categories
By Mean Scores

	Category 1 n=22	Category 2 n=23	Category 3 n=31	Category 4 n=6	Category 5 n=6	Category 6 n=12
Information	7.22	7.47	8.16	9.33	7.33	8.16
Comprehension	8.45	9.60	10.09	9.00	7.83	8.00
Arithmetic	7.00	7.39	7.74	9.66	8.50	5.83
Similarities	8.81	9.39	9.19	8.83	7.16	7.72
Digit Span	8.36	8.82	8.12	10.33	10.66	8.00
Vocabulary	7.22	7.39	8.32	10.16	7.00	8.16
Digit Symbol	11.68	8.39	9.74	10.50	8.16	8.41
Picture Completion	9.31	8.56	7.80	8.00	5.50	7.58
Block Design	7.81	9.43	6.87	7.33	7.33	6.75
Picture Arrangement	9.09	9.13	8.03	7.00	8.00	8.50
Object Assembly	8.63	9.95	6.77	9.00	7.16	8.66
Language	94.72	97.73	108.16	104.50	99.00	113.41
Reality	106.59	114.24	100.35	90.66	94.83	110.66
Motivation	97.72	100.17	102.93	113.16	116.00	104.25
Psychomotor	115.90	99.69	109.58	106.00	99.33	98.91
Affect	104.40	95.78	102.29	96.00	96.50	103.16
Elation	108.59	93.43	100.77	100.00	86.00	100.83
Depression	98.50	98.17	103.22	92.00	107.00	105.75
Judgement	98.81	105.47	99.41	102.00	99.16	97.33
Reasoning	93.72	102.47	100.06	100.50	100.66	94.83
Average Wage	.92 n=7	.85 n=4	.98 n=11	0.00	.98 n=3	.88 n=3

TABLE K

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Females--Post Data Jastak RHO Categories By Mean Scores

	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
	n=41	n=19	n=23	n=9	n=3	n=5
Information	7.58	8.26	8.52	7.77	8.33	7,60
Comprehension	9.17	11.42	10.82	9.44	7.66	9.40
Arithmetic	7.53	8.89	8.26	7.55	10.33	5.80
Similarities	9.73	11.10	10.04	10.33	8.66	8.00
Digit Span	8.29	10.31	9.73	10.44	10.33	10.80
Vocabulary	7.70	9.36	8.86	9.11	9.00	8.80
Digit Symbol	11.60	9.05	10.95	12.33	8.33	9.20
Picture Completion	9.31	10.36	8.34	8.44	7,66	8.20
Block Design	8.97	10.42	7.52	8.00	8.33	6.60
Picture Arrangement	10.14	10.89	8.34	7.55	8.00	9.80
Object Assembly	10.60	12.26	7.34	10.00	9.33	10.60
Language	91.31	93.31	104.30	99.77	108.33	102.40
Reality	109.73	112.00	96.08	94.33	104,33	106.00
Motivation	95.34	99.84	104.43	105.55	123.66	104.00
Psychomotor	112.85	92.15	111.39	114.77	96.66	98.00
Affect	99.65	96.89	102.30	97.11	98,00	104.60
Elation	98.73	95.05	104.47	102.33	95.66	100.20
Depression	100.95	99.00	100.43	91.88	100.33	108.60
Judgement	100.19	108.31	100.34	102.11	98.00	101.00
Reasoning	96.02	101.10	98,34	93.22	104.33	86.20
Average Wage	1.18 n=17	1.06 n=6	1.51 n=9	1.26 n=4	.87 n=2	1.32 n=2

TABLE L

Austin and Sommerfeld: Vocational Education for Disadvantaged Youth Project

Males--Pre Data Jastak Factor Patterns (Types) By Mean Scores

	Type A n=15	Type B n=11	Type C n=16	Type D n=21	Type E n=35	Type F n=63
Information	8.20	9.00	7.18	7.66	9.02	6.93
Comprehension	9.00	11.54	9.12	7.90	11.31	8.76
Arithmetic	8.26	8.18	9.00	8.80	7.88	6.88
Similarities	9.06	10.45	8.56	7.42	9.77	8.38
Digit Span	9.46	7.90	11.43	9.95	7.97	7.03
Vocabulary	8.13	9.36	7.56	7.90	9.82	7.12
Digit Symbol	6.66	9.09	9.43	7.38	7.34	8.61
Picture Completion	8.26	9.00	8.75	9.80	9.91	9.44
Block Design	7.20	8.50	10.06	9.61	9.51	10.38
Picture Arrangement	7.46	7.18	8.81	9.57	9.71	8.80
Object Assembly	7.33	6.36	7.25	9.90	9.85	10.06
Language	111.00	107.72	90.06	99.52	105.54	90.22
Reality	96.66	91.63	95.62	112.57	108.31	112.82
Motivation	110.46	92.72	107.93	110.90	89.85	89.25
Psychomotor	96.73	108.81	109.37	96.09	92.31	108.14
Affect	101.26	101.45	99.12	102.80	99.82	96.84
Elation	102.26	109.27	98.31	102.28	99.17	98.71
Depression	100.13	91.81	99.87	103.33	100.37	95.04
Judgement	101.86	106.54	101.00	96.00	104.62	102.65
Reasoning	99.06	100.72	97.31	98.09	100.42	98.01
Average Wage	1.20 n=6	1.30 n=7	1.56 n=9	1.38 n=9	1.56 n=17	1.38 n=40

TABLE M

Austin and Sommerfeld
Vocational Education For Disadvantaged Youth Project

Males--Post Data Jastak Factor Patterns (Types)
By Mean Scores

	Type A n=10	Type B n=10	Type C n=10	Type D n=21	Type E n=35	Type F n=75
Information	8.00	9.30	7.70	8.66	9.17	7.34
Comprehension	9.90	20.10	9.40	9.95	11.88	9.29
Arithmetic	9.00	8.20	10.60	10.71	8.00	7.44
Similarities	10.55	11.10	10.50	10.14	10.82	9.04
Digit Span	9.20	7.90	12.80	10.38	8.42	7.29
Vocabulary	8.30	8.50	8.40	9.00	10.11	7.65
Digit Symbol	7.88	9.30	11.20	8.76	8.80	9.60
Picture Completion	8.80	9.40	9.30	11.71	11.05	10.02
Block Design	7.40	7.60	10.60	11.33	10.51	10.90
Picture Arrangement	8.33	9.10	9.30	9.47	10.97	10.08
Object Assembly	8.50	7.30	11.00	12.23	11.62	11.28
Language	114.20	110.80	85.50	98.23	105.28	86.50
Reality	100.50	99.00	96.40	112.80	112.74	113.44
Motivation	112.00	96.60	110.40	109.09	93.42	87.65
Psychomotor	98.40	109.10	112.90	98.52	93.22	108.86
Affect	101.40	106.50	94.90	97.90	101.22	97.01
Elation	106.50	108.90	95.40	105.47	100.54	95.46
Depression	96.50	104.00	94.80	90.66	102.14	98.70
Judgement	103.80	99.60	103.20	103.95	104.62	102.54
Reasoning	99.30	96.60	94.60	101.95	97.74	96.60
Average Wage	1.82 n=7	1.94 n=9	1.94 n=7	2.07 n=18	1.99 n=28	2.04 n=55

TABLE N

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Females--Pre Data Jastak Factor Patterns (Types) By Mean Scores

	Type A n=16	Type B n=11	Type C n=18	Type D n=11	Type E n=20	Type F n=24
Information	8.62	8.36	7.05	8.00	8.15	7.25
Comprehension	9.68	10.09	7.16	9.27	9.80	9.33
Arithmetic	8.87	7.63	7.44	8.00	6.70	6.70
Similarities	10.18	9.36	7.58	8.63	8.95	8.62
Digit Span	9.43	7.72	9.11	10.18	7.75	8.08
Vocabulary	8.93	8.45	7.05	7.45	8.45	7.25
Digit Symbol	8.18	10.00	11.11	8.54	8.35	10.95
Picture Completion	7.37	7.45	7.00	9.00	8.30	9.37
Block Design	6.81	6.90	6.88	8.54	8.35	8.37
Picture Arrangement	8.18	8.18	6.77	9.72	9.25	9.00
Object Assembly	8.18	6.45	6.61	10.63	8.75	9.04
Language	108.87	111.00	98.44	94.63	113.20	92.79
Reality	97.50	100.72	94.50	111.00	116.15	108.62
Motivation	110.50	102.72	109.77	106.54	100.20	92.54
Psychomotor	94.68	112.09	119.44	94.18	100.55	113.08
Affect	100.00	103.72	99.33	98.45	100.60	101.66
Elation	96.68	97.54	101.27	95.72	97.75	105.70
Depression	103.25	107.90	97.44	101.09	103.80	96.12
Judgement	103.25	97.09	94.66	104.90	99.45	103.75
Reasoning	104.93	98.36	95.27	99.81	101.05	94.62
Average Wage	.98 n=3	1.00 n=3	1.00 n=5	.86 n=4	.98 n=8	.79 n=5

TABLE O

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Females--Post Data Jastak Factor Patterns (Types)
By Mean Scores

	Type A n=8	Type B n=9	Type C n=17	Type D n=15	Type E n=16	Type F n=35
Information	9.37	9.33	7.41	8.00	7.43	7.80
Comprehension	9.87	11.11	10.41	10.26	9.56	9.54
Arithmetic	9.37	7.00	8.64	9.53	6.18	7.68
Similarities	10.00	10.88	10.05	10.80	9.06	9.82
Digit Span	9.87	8.55	11.41	11.80	7.87	8.17
Vocabulary	9.62	9.44	8.23	8.86	8.18	8.14
Digit Symbol	9.87	11.11	13.17	9.06	8.37	11.68
Picture Completion	8.37	8.44	8.41	10.20	8.31	9.68
Block Design	8.12	8.66	7.29	10.06	7.06	9.65
Picture Arrangement	8.62	8.22	8.00	11.33	9.43	10.17
Object Assembly	8.25	8.66	8.23	11.93	9.62	11.17
Language	115.12	109.77	88.94	87.80	108.18	90.91
Reality	103.37	101.55	86.82	107.60	113.37	110.97
Motivation	115.37	94.88	106.17	107.86	98.00	93.74
Psychomotor	106.00	115.00	117.47	89.33	98.43	113.08
Affect	102.62	97.11	100.05	100.13	102.12	98.25
Elation	103.75	99.33	104.29	95.26	98.93	98.77
Depression	101.62	95.11	96.00	105.26	105.50	98.08
Judgement	96.62	101.22	104.17	106.40	100.50	100.94
Reasoning	102.12	96.55	92.41	100.53	97.62	96.45
Average Wage	1.37 n=5	1.25 n=1	1.25 n=10	1.10 n=6	1.30 n=4	1.22 n=14

TABLE P

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Combined Experimental And Control Group
Pre-Training

Jastak Factor Patterns

Jastak Behavioral Categories	A	B	C	Quadrant Total	D	E	F	Quadrant Total	Total
	High Language Motivation	High Language Psychomotor	High Motivation Psychomotor		High Reality Motivation	High Reality Language	High Reality Psychomotor		
—	Low Psychomotor Reality	Low Motivation Reality	Low Language Reality		Low Language Psychomotor	Low Motivation Psychomotor	Low Motivation Language		
Normal Hysteroid Overresponsive	1	1	15		3	3	43		66
Aggressive Unmotivated Irresponsible	3	0	1		19	25	40		88
Fearful Anxious Hypochondriac	9	20	8	58 21%	1	14	7	155 56%	59
Affective Elated Depressed	5	2	4		0	1	1		13
Autistic Withdrawing Suspicious	6	1	2		1	4	0		14
Disorganized Impulsive Perseverating	9	0	8	37 13%	10	8	3	28 10%	38
Totals	33	24	38		34	55	94		278

TABLE Q

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Combined Experimental And Control Group
Post-Training

Jastak Behavioral Categories	Jastak Factor Patterns								
	A	B	C		D	E	F		Total
	High Language Motivation	High Language Psychomotor	High Motivation Psychomotor	Quad-rant Total	High Reality Motivation	High Reality Language	High Reality Psychomotor	Quad-rant Total	
	Low Psychomotor Reality	Low Motivation Reality	Low Language Reality		Low Language Psychomotor	Low Motivation Psychomotor	Low Motivation Language		
Normal Hysteroid Overresponsive	2	3	12		11	11	61		100
Aggressive Unmotivated Irresponsible	0	0	0		19	28	40		87
Fearful Anxious Hypochondriac	5	12	9	43 17%	1	5	7	183 70%	39
Affective Elated Depressed	2	2	5		1	1	1		12
Autistic Withdrawing Suspicious	6	1	0		1	2	0		10
Disorganized Impulsive Perseverating	3	1	1	21 8%	3	4	1	14 5%	13
Totals	18	19	27		36	51	110		261

TABLE R

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Combined Experimental And Control Group Males
Pre-Training

	Jastak Factor Patterns								
	A	B	C		D	E	F		Total
Jastak Behavioral Categories	High Language Motivation Low Psychomotor Reality	High Language Psychomotor Low Motivation Reality	High Motivation Psychomotor Low Language Reality	Quad rant Total	High Reality Motivation Low Language Psychomotor	High Reality Language Low Motivation Psychomotor	High Reality Psychomotor Low Motivation Language	Quad rant Total	
Normal Hysteroid Overresponsive	1	1	11		3	1	25		42
Aggressive Unmotivated Irresponsible	2	0	0		9	18	34		63
Fearful Anxious Hypochondriac	1	8	1	25 15%	1	10	5	106 62%	26
Affective Elated Depressed	2	2	1		0	1	1		7
Autistic Withdrawing Suspicious	3	1	0		0	4	0		8
Disorganized Impulsive Perseverating	6	0	7	22 13%	8	2	2	18 10%	25
Totals	15	12	20		21	36	67		171

TABLE S

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Combined Experimental And Control Group Males
Post Training

	Jastak Factor Patterns								
	A	B	C		D	E	F		Total
Jastak Behavioral Categories	High Language Motivation Low Psychomotor Reality	High Language Psychomotor Low Motivation Reality	High Motivation Psychomotor Low Language Reality	Quad rant Total	High Reality Motivation Low Language Psychomotor	High Reality Language Low Motivation Psychomotor	High Reality Psychomotor Low Motivation Language	Quad rant Total	
Normal Hysteroid Overresponsive	2	2	8		10	6	31		59
Aggressive Unmotivated Irresponsible	0	0	0		9	23	36		68
Fearful Anxious Hypochondriac	0	5	1	18 11%	0	3	7	125 78%	16
Affective Elated Depressed	1	1	0		1	0	0		3
Autistic Withdrawing Suspicious	4	1	0		0	2	0		7
Disorganized Impulsive Perseverating	3	1	1	12 7%	2	1	0	6 4%	8
Totals	10	10	10		22	35	74		161

TABLE T

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Combined Experimental And Control Group Females
Pre-Training

Jastak Behavioral Categories	A High Language Motivation Low Psychomotor Reality	B High Language Psychomotor Low Motivation Reality	C High Motivation Psychomotor Low Language Reality	Quad rant Total	D High Reality Motivation Low Language Psychomotor	E High Reality Language Low Motivation Psychomotor	F High Reality Psychomotor Low Motivation Language	Quad rant Total	Total
Normal Hysteroid Overresponsive	0	0	4		0	2	18		24
Aggressive Unmotivated Irresponsible	1	0	1		10	8	5		25
Fearful Anxious Hypochondriac	8	12	7	33 31%	0	4	2	49 46%	33
Affective Elated Depressed	3	0	3		0	0	0		6
Autistic Withdrawing Suspicious	3	0	2		1	0	0		6
Disorganized Impulsive Perseverating	2	0	1	14 13%	2	7	1	11 10%	13
Totals	17	12	18		13	21	26		107

TABLE U

Austin and Sommerfeld: Vocational Education For Disadvantaged Youth Project

Combined Experimental And Control Group Females
Post-Training

Jastak Factor Patterns

Jastak Behavioral Categories	A High Language Motivation Low Psychomotor Reality	B High Language Psychomotor Low Motivation Reality	C High Motivation Psychomotor Low Language Reality	Quad-rant Total	D High Reality Motivation Low Language Psychomotor	E High Reality Language Low Motivation Psychomotor	F High Reality Psychomotor Low Motivation Language	Quad-rant Total	Total
Normal Hysteroid Overresponsive	0	1	4		1	5	30		41
Aggressive Unmotivated Irresponsible	0	0	0		11	5	3		19
Fearful Anxious Hypochondriac	5	7	8	25 25%	1	2	0	58 58%	23
Affective Elated Depressed	1	1	5		0	1	1		9
Autistic Withdrawing Suspicious	2	0	0		1	0	0		3
Disorganized Impulsive Perseverating	0	0	0	9 9%	1	3	1	8 8%	5
Totals	8	9	17		15	16	35		100

The Interpersonal Checklist Item Analysis
Experimental Group Special Sample n=27
Quadrant I: A = Pre Actual Rating (Self Concept Expressed Value)
B = Pre Ideal Rating (Self Concept Idealized Value)

A	B		A	B		A	B		A	B	
63%	74%	well thought of	22%	48%	often admired	26%	26%	always giving advice	30%	30%	tries to be too successful
48%	67%	makes a good impression	52%	85%	respected by others	11%	37%	acts important	7%	15%	expects everyone to admire him
59%	52%	able to give orders	18%	70%	good leader	0%	0%	bossy	7%	18%	manages others
4%	15%	forceful	67%	70%	likes responsibility	7%	15%	dominating	4%	7%	dictatorial
59%	56%	self-respecting	33%	56%	self-confident	7%	7%	boastful	4%	4%	somewhat snobbish
59%	63%	independent	41%	52%	self-reliant and assertive	33%	48%	proud and self-satisfied	0%	4%	egotistical and conceited
81%	85%	able to take care of self	33%	48%	businesslike	0%	7%	thinks only of himself	0%	4%	selfish
37%	15%	can be indifferent to others	42%	44%	likes to compete with others	4%	11%	shrewd and calculating	4%	7%	cold and unfeeling
56%	56%	can be strict if necessary	59%	59%	hard-boiled when necessary	18%	15%	impatient with others' mistakes	4%	7%	sarcastic
33%	44%	firm but just	26%	37%	stern but fair	11%	18%	self-seeking	0%	4%	cruel and unkind
74%	78%	can be frank and honest	4%	4%	irritable	26%	22%	outspoken	15%	15%	frequently angry
15%	0%	critical of others	56%	63%	straightforward and direct	4%	0%	often unfriendly	7%	4%	hard-hearted
67%	74%	can complain if necessary	33%	22%	resents being bossed	0%	4%	bitter	4%	7%	resentful
15%	7%	often gloomy	11%	11%	skeptical	11%	7%	complaining	0%	11%	rebels against everything
41%	37%	able to doubt others	30%	11%	hard to impress	18%	11%	jealous	26%	11%	stubborn
44%	26%	frequently disappointed	33%	15%	touchy and easily hurt	15%	11%	slow to forgive a wrong	7%	4%	distrusts everybody
81%	67%	able to criticize self	56%	26%	easily embarrassed	15%	30%	self-punishing	15%	7%	timid
33%	30%	apologetic	11%	7%	lacks self-confidence	15%	15%	shy	7%	18%	always ashamed of self
67%	78%	can be obedient	7%	4%	easily led	11%	4%	passive and unaggressive	15%	22%	obeys too willingly
30%	22%	usually gives in	33%	37%	modest	11%	7%	meek	4%	4%	spineless
81%	74%	grateful	56%	41%	often helped by others	48%	56%	dependent	37%	33%	hardly ever talks back
15%	22%	admires and imitates others	59%	63%	very respectful to authority	15%	15%	wants to be led	4%	7%	clinging vine
63%	70%	appreciative	67%	70%	accepts advice readily	22%	15%	lets others make decisions	18%	26%	likes to be taken care of
56%	56%	very anxious to be approved of	48%	67%	trusting and eager to please	15%	15%	easily fooled	4%	7%	will believe anyone
67%	74%	cooperative	33%	56%	always pleasant and agreeable	7%	15%	too easily influenced by friends	18%	37%	wants everyone's love
85%	81%	eager to get along with others	70%	81%	wants everyone to like him	7%	18%	will confide in anyone	4%	15%	agrees with everyone
85%	93%	friendly	70%	93%	sociable and neighborly	18%	44%	fond of everyone	48%	70%	friendly all the time
63%	81%	affectionate and understanding	44%	59%	warm	22%	37%	likes everybody	41%	56%	loves everyone
70%	81%	considerate	56%	78%	kind and reassuring	30%	48%	forgives anything	15%	33%	too lenient with others
56%	66%	encourages others	56%	63%	tender and soft-hearted	4%	18%	oversympathetic	37%	63%	tries to comfort everyone
74%	89%	helpful	56%	59%	enjoys taking care of others	11%	37%	generous to a fault	26%	33%	too willing to give to others
30%	56%	big-hearted and unselfish	26%	44%	gives freely of self	4%	11%	overprotective of others	7%	18%	spoils people with kindness

TABLE W

The Interpersonal Checklist Item Analysis
Experimental Group Special Sample n=55
Quadrant II: A = Pre Actual Rating (Self Concept Expressed Value)
B = Pre Ideal Rating (Self Concept Idealized Value)

A	B		A	B		A	B		A	B	
31%	69%	well thought of	13%	34%	often admired	18%	16%	always giving advice	42%	27%	tries to be too successful
33%	62%	makes a good impression	49%	71%	respected by others	13%	13%	acts important	5%	11%	expects everyone to admire him
58%	73%	able to give orders	16%	54%	good leader	11%	5%	bossy	11%	14%	manages others
13%	24%	forceful	51%	64%	likes responsibility	7%	14%	dominating	2%	2%	dictatorial
62%	69%	self-respecting	33%	60%	self-confident	5%	5%	boastful	4%	5%	somewhat snobbish
62%	65%	independent	38%	45%	self-reliant and assertive	36%	49%	proud and self-satisfied	5%	11%	egotistical and conceited
82%	76%	able to take care of self	18%	38%	businesslike	5%	7%	thinks only of himself	0%	2%	selfish
34%	14%	can be indifferent to others	49%	14%	likes to compete with others	7%	14%	shrewd and calculating	2%	9%	cold and unfeeling
61%	64%	can be strict if necessary	53%	58%	hard-boiled when necessary	24%	14%	impatient with others' mistakes	9%	9%	sarcastic
33%	64%	firm but just	25%	54%	stern but fair	13%	20%	self-seeking	4%	5%	cruel and unkind
82%	71%	can be frank and honest	20%	7%	irritable	18%	18%	outspoken	20%	13%	frequently angry
7%	9%	critical of others	54%	58%	straightforward and direct	14%	16%	often unfriendly	5%	13%	hard-hearted
82%	64%	can complain if necessary	40%	31%	resents being bossed	9%	9%	bitter	9%	9%	resentful
22%	13%	often gloomy	20%	20%	skeptical	9%	11%	complaining	0%	7%	rebels against everything
60%	45%	able to doubt others	31%	18%	hard to impress	29%	16%	jealous	38%	31%	stubborn
40%	20%	frequently disappointed	34%	18%	touchy and easily hurt	27%	22%	slow to forgive a wrong	13%	11%	distrusts everybody
58%	67%	able to criticize self	47%	24%	easily embarrassed	14%	20%	self-punishing	5%	7%	timid
18%	23%	apologetic	25%	13%	lacks self-confidence	33%	9%	shy	11%	13%	always ashamed of self
60%	53%	can be obedient	9%	5%	easily led	5%	11%	passive and unaggressive	14%	9%	obeys too willingly
29%	22%	usually gives in	34%	29%	modest	11%	5%	meek	7%	9%	spineless
74%	60%	grateful	44%	25%	often helped by others	58%	56%	dependent	47%	38%	hardly ever talks back
31%	22%	admires and imitates others	71%	71%	very respectful to authority	13%	7%	wants to be led	0%	7%	clinging vine
64%	64%	appreciative	64%	58%	accepts advice readily	27%	20%	lets others make decisions	14%	13%	likes to be taken care of
54%	53%	very anxious to be approved of	53%	51%	trusting and eager to please	18%	11%	easily fooled	7%	18%	will believe anyone
89%	71%	cooperative	40%	62%	always pleasant and agreeable	25%	13%	too easily influenced by friends	27%	27%	wants everyone's love
71%	71%	eager to get along with others	69%	62%	wants everyone to like him	13%	14%	will confide in anyone	11%	18%	agrees with everyone
89%	71%	friendly	74%	71%	sociable and neighborly	33%	40%	fond of everyone	51%	69%	friendly all the time
58%	56%	affectionate and understanding	36%	49%	warm	13%	20%	likes everybody	44%	49%	loves everyone
74%	74%	considerate	51%	60%	kind and reassuring	29%	24%	forgives anything	33%	22%	too lenient with others
47%	53%	encourages others	54%	42%	tender and soft-hearted	13%	7%	oversympathetic	34%	38%	tries to comfort everyone
82%	84%	helpful	36%	49%	enjoys taking care of others	29%	25%	generous to a fault	29%	27%	too willing to give to others
54%	49%	big-hearted and unselfish	33%	44%	gives freely of self	16%	13%	overprotective of others	22%	13%	spoils people with kindness

The Interpersonal Checklist Item Analysis

Experimental Group Special Sample n=16

Quadrant III: A = Pre Actual Rating (Self Concept Expressed Value)
B = Pre Ideal Rating (Self Concept Idealized Value)

A	B		A	B		A	B		A	B	
50%	62%	well thought of	19%	50%	often admired	6%	12%	always giving advice	25%	19%	tries to be too successful
25%	75%	makes a good impression	44%	75%	respected by others	19%	19%	acts important	12%	12%	expects everyone to admire him
44%	75%	able to give orders	19%	69%	good leader	0%	0%	bossy	12%	25%	manages others
12%	37%	forceful	81%	75%	likes responsibility	0%	6%	dominating	0%	6%	dictatorial
81%	87%	self-respecting	50%	75%	self-confident	0%	6%	boastful	6%	0%	somewhat snobbish
25%	75%	independent	31%	62%	self-reliant and assertive	12%	62%	proud and self-satisfied	0%	0%	egotistical and conceited
81%	87%	able to take care of self	25%	50%	businesslike	0%	0%	thinks only of himself	6%	0%	selfish
25%	19%	can be indifferent to others	62%	75%	likes to compete with others	6%	6%	shrewd and calculating	6%	12%	cold and unfeeling
87%	62%	can be strict if necessary	37%	69%	hard-boiled when necessary	6%	0%	impatient with others' mistakes	12%	6%	sarcastic
25%	50%	firm but just	37%	56%	stern but fair	12%	19%	self-seeking	6%	0%	cruel and unkind
81%	81%	can be frank and honest	19%	6%	irritable	25%	19%	outspoken	6%	0%	frequently angry
12%	6%	critical of others	69%	69%	straightforward and direct	0%	12%	often unfriendly	6%	0%	hard-hearted
69%	50%	can complain if necessary	31%	19%	resents being bossed	12%	0%	bitter	12%	0%	resentful
19%	6%	often gloomy	6%	19%	skeptical	6%	0%	complaining	0%	0%	rebels against everything
50%	44%	able to doubt others	6%	19%	hard to impress	31%	6%	jealous	37%	12%	stubborn
50%	6%	frequently disappointed	25%	6%	touchy and easily hurt	19%	19%	slow to forgive a wrong	0%	6%	distrusts everybody
69%	44%	able to criticize self	50%	19%	easily embarrassed	12%	19%	self-punishing	6%	6%	timid
31%	37%	apologetic	19%	12%	lacks self-confidence	31%	12%	shy	0%	0%	always ashamed of self
75%	75%	can be obedient	6%	12%	easily led	6%	6%	passive and unaggressive	25%	12%	obeys too willingly
19%	19%	usually gives in	44%	56%	modest	6%	31%	meek	6%	6%	spineless
62%	69%	grateful	44%	25%	often helped by others	50%	44%	dependent	44%	69%	hardly ever talks back
19%	12%	admires and imitates others	62%	62%	very respectful to authority	6%	6%	wants to be led	6%	6%	clinging vine
75%	62%	appreciative	69%	62%	accepts advice readily	25%	25%	lets others make decisions	25%	12%	likes to be taken care of
94%	50%	very anxious to be approved of	69%	62%	trusting and eager to please	25%	6%	easily fooled	12%	31%	will believe anyone
94%	75%	cooperative	31%	69%	always pleasant and agreeable	25%	12%	too easily influenced by friends	25%	25%	wants everyone's love
81%	81%	eager to get along with others	81%	69%	wants everyone to like him	12%	19%	will confide in anyone	0%	12%	agrees with everyone
100%	75%	friendly	62%	69%	sociable and neighborly	31%	44%	fond of everyone	37%	62%	friendly all the time
56%	69%	affectionate and understanding	44%	31%	warm	0%	12%	likes everybody	44%	62%	loves everyone
81%	69%	considerate	75%	62%	kind and reassuring	37%	31%	forgives anything	50%	25%	too lenient with others
62%	37%	encourages others	37%	25%	tender and soft-hearted	12%	6%	oversympathetic	50%	25%	tries to comfort everyone
69%	81%	helpful	37%	25%	enjoys taking care of others	19%	12%	generous to a fault	25%	12%	too willing to give to others
31%	50%	big-hearted and unselfish	25%	44%	gives freely of self	12%	12%	overprotective of others	19%	19%	spoils people with kindness

TABLE Y

The Interpersonal Checklist Item Analysis
Experimental Group Special Sample n=17
Quadrant IV: A = Pre Actual Rating (Self Concept Expressed Value)
B = Pre Ideal Rating (Self Concept Expressed Value)

A	B		A	B		A	B		A	B	
35%	71%	well thought of	23%	47%	often admired	6%	18%	always giving advice	41%	53%	tries to be too successful
35%	59%	makes a good impression	35%	82%	respected by others	0%	12%	acts important	6%	18%	expects everyone to admire him
47%	59%	able to give orders	23%	47%	good leader	0%	0%	bossy	12%	35%	manages others
18%	35%	forceful	53%	59%	likes responsibility	6%	12%	dominating	0%	0%	dictatorial
71%	88%	self-respecting	35%	76%	self-confident	0%	6%	boastful	6%	6%	somewhat snobbish
53%	82%	independent	47%	59%	self-reliant and assertive	53%	65%	proud and self-satisfied	0%	0%	egotistical and conceited
82%	94%	able to take care of self	29%	35%	businesslike	0%	0%	thinks only of himself	6%	0%	selfish
18%	18%	can be indifferent to others	47%	65%	likes to compete with others	6%	12%	shrewd and calculating	6%	6%	cold and unfeeling
53%	88%	can be strict if necessary	41%	47%	hard-boiled when necessary	35%	18%	impatient with others mistakes	6%	6%	sarcastic
29%	59%	firm but just	29%	35%	stern but fair	12%	18%	self-seeking	0%	6%	cruel and unkind
71%	94%	can be frank and honest	6%	6%	irritable	23%	23%	outspoken	12%	12%	frequently angry
12%	6%	critical of others	59%	76%	straightforward and direct	0%	0%	often unfriendly	12%	12%	hard-hearted
65%	71%	can complain if necessary	29%	18%	resents being bossed	6%	0%	bitter	12%	6%	resentful
12%	6%	often gloomy	29%	18%	skeptical	6%	6%	complaining	0%	0%	rebels against everything
41%	35%	able to doubt others	23%	18%	hard to impress	18%	12%	jealous	18%	23%	stubborn
41%	18%	frequently disappointed	23%	12%	touchy and easily hurt	23%	18%	slow to forgive a wrong	6%	6%	distrusts everybody
76%	76%	able to criticize self	41%	23%	easily embarrassed	12%	18%	self-punishing	6%	6%	timid
29%	41%	apologetic	35%	6%	lacks self-confidence	18%	18%	shy	6%	18%	always ashamed of self
53%	76%	can be obedient	6%	6%	easily led	12%	12%	passive and unaggressive	6%	29%	obeys too willingly
29%	29%	usually gives in	29%	35%	modest	0%	6%	meek	0%	0%	spineless
59%	76%	grateful	35%	23%	often helped by others	65%	59%	dependent	53%	53%	hardly ever talks back
23%	23%	admires and imitates others	65%	65%	very respectful to authority	12%	6%	wants to be led	0%	0%	clinging vine
71%	76%	appreciative	53%	76%	accepts advice readily	29%	18%	lets others make decisions	12%	18%	likes to be taken care of
53%	59%	very anxious to be approved of	41%	53%	trusting and eager to please	29%	18%	easily fooled	18%	12%	will believe anyone
71%	88%	cooperative	47%	65%	always pleasant and agreeable	29%	29%	too easily influenced by friends	23%	29%	wants everyone's love
65%	76%	eager to get along with others	59%	76%	wants everyone to like him	6%	18%	will confide in anyone	18%	12%	agrees with everyone
82%	76%	friendly	82%	82%	sociable and neighborly	47%	47%	fond of everyone	35%	59%	friendly all the time
47%	82%	affectionate and understanding	35%	47%	warm	18%	35%	likes everybody	53%	65%	loves everyone
76%	88%	considerate	41%	65%	kind and reassuring	12%	29%	forgives anything	29%	23%	too lenient with others
47%	59%	encourages others	35%	47%	tender and soft-hearted	6%	18%	oversympathetic	23%	41%	tries to comfort everyone
59%	82%	helpful	35%	47%	enjoys taking care of others	12%	18%	generous to a fault	29%	29%	too willing to give to others
35%	59%	big-hearted and unselfish	12%	47%	gives freely of self	6%	0%	overprotective of others	6%	12%	spoils people with kindness

The Interpersonal Checklist Item Analysis
Experimental Group Special Sample n=25
Quadrant I: A = Post Actual Rating (Self Concept Expressed Value)
B = Post Ideal Rating (Self Concept Idealized Value)

A	B		A	B		A	B		A	B	
50%	68%	well thought of	29%	36%	often admired	0%	4%	always giving advice	37%	32%	tries to be too successful
33%	76%	makes a good impression	54%	56%	respected by others	12%	16%	acts important	0%	4%	expects everyone to admire him
58%	52%	able to give orders	29%	72%	good leader	4%	0%	bossy	0%	0%	manages others
17%	4%	forceful	58%	60%	likes responsibility	0%	4%	dominating	4%	0%	dictatorial
75%	60%	self-respecting	54%	52%	self-confident	0%	0%	boastful	0%	0%	somewhat snobbish
42%	56%	independent	42%	52%	self-reliant and assertive	29%	60%	proud and self-satisfied	0%	8%	egotistical and conceited
75%	72%	able to take care of self	33%	36%	businesslike	4%	8%	thinks only of himself	0%	0%	selfish
21%	4%	can be indifferent to others	37%	36%	likes to compete with others	0%	4%	shrewd and calculating	0%	0%	cold and unfeeling
62%	44%	can be strict if necessary	50%	48%	hard-boiled when necessary	21%	8%	impatient with others' mistakes	4%	4%	sarcastic
42%	48%	firm but just	37%	24%	stern but fair	17%	16%	self-seeking	0%	0%	cruel and unkind
87%	76%	can be frank and honest	0%	0%	irritable	12%	12%	outspoken	17%	4%	frequently angry
0%	0%	critical of others	42%	60%	straightforward and direct	0%	4%	often unfriendly	0%	0%	hard-hearted
87%	68%	can complain if necessary	12%	0%	resents being bossed	4%	4%	bitter	4%	4%	resentful
17	4%	often gloomy	4%	8%	skeptical	4%	0%	complaining	0%	0%	rebels against everything
58%	44%	able to doubt others	17%	4%	hard to impress	25%	4%	jealous	25%	8%	stubborn
25%	4%	frequently disappointed	25%	4%	touchy and easily hurt	12%	4%	slow to forgive a wrong	4%	0%	distrusts everybody
54%	52%	able to criticize self	25%	8%	easily embarrassed	8%	4%	self-punishing	4%	0%	timid
33%	12%	apologetic	25%	8%	lacks self-confidence	17%	4%	shy	12%	0%	always ashamed of self
67%	40%	can be obedient	4%	0%	easily led	0%	0%	passive and unaggressive	12%	8%	obeys too willingly
25%	4%	usually gives in	29%	28%	modest	12%	8%	meek	0%	0%	spineless
75%	68%	grateful	54%	24%	often helped by others	50%	52%	dependent	25%	28%	hardly ever talks back
17%	12%	admires and imitates others	62%	64%	very respectful to authority	0%	4%	wants to be led	4%	0%	clinging vine
71%	68%	appreciative	58%	44%	accepts advice readily	25%	4%	lets others make decisions	12%	8%	likes to be taken care of
58%	36%	very anxious to be approved of	37%	44%	trusting and eager to please	12%	8%	easily fooled	8%	12%	will believe anyone
67%	76%	cooperative	25%	60%	always pleasant and agreeable	17%	0%	too easily influenced by friends	21%	20%	wants everyone's love
75%	56%	eager to get along with others	54%	44%	wants everyone to like him	4%	4%	will confide in anyone	8%	4%	agrees with everyone
83%	80%	friendly	71%	88%	sociable and neighborly	29%	40%	fond of everyone	42%	64%	friendly all the time
62%	56%	affectionate and understanding	46%	40%	warm	17%	20%	likes everybody	37%	60%	loves everyone
67%	56%	considerate	46%	68%	kind and reassuring	25%	16%	forgives anything	25%	12%	too lenient with others
50%	40%	encourages others	50%	40%	tender and soft-hearted	21%	0%	oversympathetic	42%	40%	tries to comfort everyone
67%	80%	helpful	50%	36%	enjoys taking care of others	8%	12%	generous to a fault	21%	16%	too willing to give to others
37%	32%	big-hearted and unselfish	21%	20%	gives freely of self	17%	0%	overprotective of others	12%	4%	spoils people with kindness

TABLE AA

The Interpersonal Checklist Item Analysis
Experimental Group Special Sample n=68
Quadrant II· A = Post Actual Rating (Self Concept Expressed Value)
B = Post Ideal Rating (Self Concept Idealized Value)

A	B		A	B		A	B		A	B	
34%	75%	well thought of	25%	42%	often admired	13%	18%	always giving advice	32%	37%	tries to be too successful
43%	67%	makes a good impression	47%	66%	respected by others	16%	19%	acts important	7%	7%	expects everyone to admire him
68%	72%	able to give orders	18%	78%	good leader	9%	4%	bossy	16%	27%	manages others
10%	33%	forceful	59%	55%	likes responsibility	4%	12%	dominating	1%	1%	dictatorial
57%	67%	self-respecting	43%	60%	self-confident	4%	1%	boastful	6%	1%	somewhat snobbish
56%	60%	independent	37%	54%	self-reliant and assertive	37%	61%	proud and self-satisfied	0%	0%	egotistical and conceited
87%	69%	able to take care of self	21%	46%	businesslike	3%	3%	thinks only of himself	3%	0%	selfish
34%	24%	can be indifferent to others	50%	51%	likes to compete with others	3%	18%	shrewd and calculating	1%	4%	cold and unfeeling
75%	57%	can be strict if necessary	69%	58%	hard-boiled when necessary	13%	13%	impatient with others' mistakes	13%	3%	sarcastic
41%	60%	firm but just	34%	54%	stern but fair	16%	16%	self-seeking	3%	1%	cruel and unkind
90%	66%	can be frank and honest	10%	3%	irritable	18%	18%	outspoken	26%	10%	frequently angry
3%	12%	critical of others	51%	67%	straightforward and direct	12%	1%	often unfriendly	6%	4%	hard-hearted
81%	63%	can complain if necessary	29%	19%	resents being bossed	9%	6%	bitter	4%	1%	resentful
23%	3%	often gloomy	16%	18%	skeptical	7%	0%	complaining	0%	0%	rebels against everything
62%	43%	able to doubt others	22%	18%	hard to impress	28%	15%	jealous	40%	24%	stubborn
22%	9%	frequently disappointed	40%	6%	touchy and easily hurt	23%	10%	slow to forgive a wrong	4%	4%	distrusts everybody
73%	64%	able to criticize self	40%	9%	easily embarrassed	9%	9%	self-punishing	3%	3%	timid
23%	30%	apologetic	18%	4%	lacks self-confidence	34%	6%	shy	12%	1%	always ashamed of self
66%	40%	can be obedient	12%	3%	easily led	10%	7%	passive and unaggressive	21%	10%	obeys too willingly
31%	1%	usually gives in	37%	39%	modest	10%	7%	meek	7%	1%	spineless
72%	58%	grateful	35%	25%	often helped by others	50%	42%	dependent	40%	31%	hardly ever talks back
21%	12%	admires and imitates others	65%	66%	very respectful to authority	9%	7%	wants to be led	3%	4%	clinging vine
62%	60%	appreciative	60%	52%	accepts advice readily	31%	16%	lets others make decisions	15%	19%	likes to be taken care of
71%	55%	very anxious to be approved of	57%	60%	trusting and eager to please	19%	4%	easily fooled	9%	4%	will believe anyone
84%	73%	cooperative	31%	63%	always pleasant and agreeable	22%	6%	too easily influenced by friends	22%	30%	wants everyone's love
76%	67%	eager to get along with others	72%	61%	wants everyone to like him	12%	10%	will confide in anyone	6%	21%	agrees with everyone
81%	72%	friendly	76%	73%	sociable and neighborly	26%	55%	fond of everyone	38%	72%	friendly all the time
57%	61%	affectionate and understanding	47%	54%	warm	15%	28%	likes everybody	41%	55%	loves everyone
71%	64%	considerate	47%	61%	kind and reassuring	26%	42%	forgives anything	41%	13%	too lenient with others
54%	54%	encourages others	53%	46%	tender and soft-hearted	16%	10%	oversympathetic	38%	51%	tries to comfort everyone
79%	79%	helpful	47%	51%	enjoys taking care of others	26%	24%	generous to a fault	31%	22%	too willing to give to others
44%	55%	big-hearted and unselfish	43%	43%	gives freely of self	15%	6%	overprotective of others	19%	15%	spoils people with kindness

The Interpersonal Checklist Item Analysis
Experimental Group Special Sample n=15
Quadrant III: A = Post Actual Rating (Self Concept Expressed Value)
B = Post Ideal Rating (Self Concept Idealized Value)

A	B		A	B		A	B		A	B	
33%	60%	well thought of	13%	40%	often admired	0%	0%	always giving advice	53%	20%	tries to be too successful
33%	60%	makes a good impression	53%	80%	respected by others	0%	13%	acts important	7%	7%	expects everyone to admire him
33%	53%	able to give orders	0%	60%	good leader	0%	0%	bossy	0%	20%	manages others
0%	20%	forceful	73%	53%	likes responsibility	20%	7%	dominating	0%	13%	dictatorial
73%	67%	self-respecting	40%	33%	self-confident	7%	0%	boastful	7%	0%	somewhat snobbish
53%	67%	independent	47%	53%	self-reliant and assertive	27%	40%	proud and self-satisfied	7%	7%	egotistical and conceited
87%	80%	able to take care of self	33%	53%	businesslike	0%	0%	thinks only of himself	7%	0%	selfish
13%	13%	can be indifferent to others	40%	40%	likes to compete with others	7%	7%	shrewd and calculating	0%	0%	cold and unfeeling
73%	53%	can be strict if necessary	47%	40%	hard-boiled when necessary	20%	0%	impatient with others' mistakes	7%	0%	sarcastic
40%	60%	firm but just	40%	60%	stern but fair	7%	20%	self-seeking	0%	0%	cruel and unkind
93%	67%	can be frank and honest	13%	0%	irritable	13%	20%	outspoken	13%	0%	frequently angry
20%	13%	critical of others	40%	40%	straightforward and direct	20%	7%	often unfriendly	0%	0%	hard-hearted
80%	53%	can complain if necessary	27%	0%	resents being bossed	7%	0%	bitter	0%	0%	resentful
27%	0%	often gloomy	27%	13%	skeptical	20%	0%	complaining	0%	0%	rebels against everything
67%	33%	able to doubt others	20%	27%	hard to impress	7%	0%	jealous	33%	0%	stubborn
60%	7%	frequently disappointed	33%	0%	touchy and easily hurt	13%	13%	slow to forgive a wrong	0%	0%	distrusts everybody
67%	67%	able to criticize self	40%	0%	easily embarrassed	13%	7%	self-punishing	7%	0%	timid
27%	40%	apologetic	27%	7%	lacks self-confidence	33%	0%	shy	7%	0%	always ashamed of self
67%	47%	can be obedient	0%	0%	easily led	7%	7%	passive and unaggressive	20%	0%	obeys too willingly
40%	0%	usually gives in	53%	47%	modest	7%	13%	meek	7%	7%	spineless
80%	53%	grateful	47%	27%	often helped by others	53%	40%	dependent	47%	20%	hardly ever talks back
7%	0%	admires and imitates others	60%	67%	very respectful to authority	7%	0%	wants to be led	0%	0%	clinging vine
73%	73%	appreciative	47%	47%	accepts advice readily	20%	13%	lets others make decisions	13%	7%	likes to be taken care of
73%	53%	very anxious to be approved of	53%	73%	trusting and eager to please	33%	0%	easily fooled	0%	7%	will believe anyone
93%	60%	cooperative	33%	80%	always pleasant and agreeable	27%	0%	too easily influenced by friends	20%	20%	wants everyone's love
67%	80%	eager to get along with others	87%	47%	wants everyone to like him	20%	7%	will confide in anyone	20%	27%	agrees with everyone
87%	73%	friendly	80%	73%	sociable and neighborly	7%	47%	fond of everyone	27%	80%	friendly all the time
47%	67%	affectionate and understanding	33%	40%	warm	0%	20%	likes everybody	33%	40%	loves everyone
60%	73%	considerate	33%	67%	kind and reassuring	20%	20%	forgives anything	33%	20%	too lenient with others
40%	53%	encourages others	33%	27%	tender and soft-hearted	20%	7%	oversympathetic	27%	33%	tries to comfort everyone
67%	73%	helpful	33%	47%	enjoys taking care of others	7%	27%	generous to a fault	7%	13%	too willing to give to others
27%	53%	big-hearted and unselfish	20%	40%	gives freely of self	0%	20%	overprotective of others	13%	7%	spoils people with kindness

The Interpersonal Checklist Item Analysis
Experimental Group Special Sample n=15
Quadrant III: A = Post Actual Rating (Self Concept Expressed Value)
B = Post Ideal Rating (Self Concept Idealized Value)

A	B		A	B		A	B		A	B	
33%	60%	well thought of	13%	40%	often admired	0%	0%	always giving advice	53%	20%	tries to be too successful
33%	60%	makes a good impression	53%	80%	respected by others	0%	13%	acts important	7%	7%	expects everyone to admire him
33%	53%	able to give orders	0%	60%	good leader	0%	0%	bossy	0%	20%	manages others
0%	20%	forceful	73%	53%	likes responsibility	20%	7%	dominating	0%	13%	dictatorial
73%	67%	self-respecting	40%	33%	self-confident	7%	0%	boastful	7%	0%	somewhat snobbish
53%	67%	independent	47%	53%	self-reliant and assertive	27%	40%	proud and self-satisfied	7%	7%	egotistical and conceited
87%	80%	able to take care of self	33%	53%	businesslike	0%	0%	thinks only of himself	7%	0%	selfish
13%	13%	can be indifferent to others	40%	40%	likes to compete with others	7%	7%	shrewd and calculating	0%	0%	cold and unfeeling
73%	53%	can be strict if necessary	47%	40%	hard-boiled when necessary	20%	0%	impatient with others' mistakes	7%	0%	sarcastic
40%	60%	firm but just	40%	60%	stern but fair	7%	20%	self-seeking	0%	0%	cruel and unkind
93%	67%	can be frank and honest	13%	0%	irritable	13%	20%	outspoken	13%	0%	frequently angry
20%	13%	critical of others	40%	40%	straightforward and direct	20%	7%	often unfriendly	0%	0%	hard-hearted
80%	53%	can complain if necessary	27%	0%	resents being bossed	7%	0%	bitter	0%	0%	resentful
27%	0%	often gloomy	27%	13%	skeptical	20%	0%	complaining	0%	0%	rebels against everything
67%	33%	able to doubt others	20%	27%	hard to impress	7%	0%	jealous	33%	0%	stubborn
60%	7%	frequently disappointed	33%	0%	touchy and easily hurt	13%	13%	slow to forgive a wrong	0%	0%	distrusts everybody
67%	67%	able to criticize self	40%	0%	easily embarrassed	13%	7%	self-punishing	7%	0%	timid
27%	40%	apologetic	27%	7%	lacks self-confidence	33%	0%	shy	7%	0%	always ashamed of self
67%	47%	can be obedient	0%	0%	easily led	7%	7%	passive and unaggressive	20%	0%	obeys too willingly
40%	0%	usually gives in	53%	47%	modest	7%	13%	meek	7%	7%	spineless
80%	53%	grateful	47%	27%	often helped by others	53%	40%	dependent	47%	20%	hardly ever talks back
7%	0%	admires and imitates others	60%	67%	very respectful to authority	7%	0%	wants to be led	0%	0%	clinging vine
73%	73%	appreciative	47%	47%	accepts advice readily	20%	13%	lets others make decisions	13%	7%	likes to be taken care of
73%	53%	very anxious to be approved of	53%	73%	trusting and eager to please	33%	0%	easily fooled	0%	7%	will believe anyone
93%	60%	cooperative	33%	80%	always pleasant and agreeable	27%	0%	too easily influenced by friends	20%	20%	wants everyone's love
67%	80%	eager to get along with others	87%	47%	wants everyone to like him	20%	7%	will confide in anyone	20%	27%	agrees with everyone
87%	73%	friendly	80%	73%	sociable and neighborly	7%	47%	fond of everyone	27%	80%	friendly all the time
47%	67%	affectionate and understanding	33%	40%	warm	0%	20%	likes everybody	33%	40%	loves everyone
60%	73%	considerate	33%	67%	kind and reassuring	20%	20%	forgives anything	33%	20%	too lenient with others
40%	53%	encourages others	33%	27%	tender and soft-hearted	20%	7%	oversympathetic	27%	33%	tries to comfort everyone
67%	73%	helpful	33%	47%	enjoys taking care of others	7%	27%	generous to a fault	7%	13%	too willing to give to others
27%	53%	big-hearted and unselfish	20%	40%	gives freely of self	0%	20%	overprotective of others	13%	7%	spoils people with kindness

TABLE CC

The Interpersonal Checklist Item Analysis
Experimental Group Special Sample n=8
Quadrant IV: A = Post Actual Rating (Self Concept Expressed Value)
B = Post Ideal Rating (Self Concept Idealized Value)

A	B		A	B		A	B		A	B	
50%	37%	well thought of	0%	50%	often admired	25%	25%	always giving advice	62%	37%	tries to be too successful
25%	75%	makes a good impression	62%	62%	respected by others	0%	12%	acts important	0%	0%	expects everyone to admire him
87%	50%	able to give orders	25%	75%	good leader	12%	12%	bossy	0%	25%	manages others
0%	37%	forceful	62%	75%	likes responsibility	12%	0%	dominating	0%	0%	dictatorial
100%	62%	self-respecting	62%	50%	self-confident	0%	0%	boastful	0%	0%	somewhat snobbish
50%	37%	independent	75%	37%	self-reliant and assertive	62%	75%	proud and self-satisfied	0%	0%	egotistical and conceited
87%	37%	able to take care of self	50%	25%	businesslike	0%	0%	thinks only of himself	0%	0%	selfish
37%	25%	can be indifferent to others	75%	50%	likes to compete with others	0%	25%	shrewd and calculating	12%	0%	cold and unfeeling
50%	50%	can be strict if necessary	50%	37%	hard-boiled when necessary	12%	25%	impatient with others' mistakes	37%	0%	sarcastic
50%	62%	firm but just	50%	37%	stern but fair	0%	25%	self-seeking	12%	0%	cruel and unkind
100%	62%	can be frank and honest	0%	0%	irritable	12%	25%	outspoken	25%	0%	frequently angry
0%	12%	critical of others	37%	37%	straightforward and direct	12%	0%	often unfriendly	12%	0%	hard-hearted
100%	50%	can complain if necessary	25%	0%	resents being bossed	0%	0%	bitter	0%	0%	resentful
50%	0%	often gloomy	12%	0%	skeptical	0%	0%	complaining	0%	12%	rebels against everything
50%	50%	able to doubt others	37%	25%	hard to impress	25%	0%	jealous	25%	0%	stubborn
25%	12%	frequently disappointed	25%	0%	touchy and easily hurt	37%	12%	slow to forgive a wrong	0%	0%	distrusts everybody
62%	62%	able to criticize self	37%	0%	easily embarrassed	37%	0%	self-punishing	12%	0%	timid
25%	25%	apologetic	12%	0%	lacks self-confidence	25%	12%	shy	0%	0%	always ashamed of self
50%	50%	can be obedient	0%	0%	easily led	0%	0%	passive and unaggressive	12%	12%	obeys too willingly
25%	12%	usually gives in	0%	12%	modest	0%	12%	meek	0%	0%	spineless
87%	62%	grateful	50%	0%	often helped by others	50%	37%	dependent	37%	37%	hardly ever talks back
25%	12%	admires and imitates others	100%	62%	very respectful to authority	0%	0%	wants to be led	0%	0%	clinging vine
75%	50%	appreciative	50%	50%	accepts advice readily	25%	12%	lets others make decisions	12%	37%	likes to be taken care of
50%	62%	very anxious to be approved of	62%	75%	trusting and eager to please	12%	0%	easily fooled	12%	12%	will believe anyone
100%	62%	cooperative	50%	62%	always pleasant and agreeable	25%	12%	too easily influenced by friends	12%	12%	wants everyone's love
75%	50%	eager to get along with others	50%	50%	wants everyone to like him	12%	0%	will confide in anyone	25%	25%	agrees with everyone
75%	62%	friendly	87%	50%	sociable and neighborly	12%	50%	fond of everyone	25%	37%	friendly all the time
87%	50%	affectionate and understanding	87%	50%	warm	25%	25%	likes everybody	37%	50%	loves everyone
75%	50%	considerate	75%	50%	kind and reassuring	12%	75%	forgives anything	50%	25%	too lenient with others
62%	62%	encourages others	62%	37%	tender and soft-hearted	25%	25%	oversympathetic	37%	75%	tries to comfort everyone
100%	50%	helpful	87%	37%	enjoys taking care of others	12%	12%	generous to a fault	25%	37%	too willing to give to others
62%	50%	big-hearted and unselfish	75%	25%	gives freely of self	25%	0%	overprotective of others	12%	25%	spoils people with kindness